PRACTICAL KINDERGARTEN

for
Infant
Schools.

MRS MORTIMER.

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FOR

ENGLISH INFANT SCHOOLS

BY

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WITH NUMEROUS ORIGINAL ILLUSTRATIONS

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PREFACE.

TEACHERS wishing to introduce Kindergarten into their schools are often prevented from so doing by the initial difficulties of beginning. It is hoped that after reading this book these difficulties will not appear so great, and that such teachers will make an effort to give their children the benefits of this natural system of training the young.

Should this manual induce teachers to do this, and lead to a further study of the works of Fröbel, and tend to introduce a true Fröbelian spirit into our schools, it will have more than fulfilled its object.

Only so much of the practical part of the subject as may well be introduced into the ordinary infant schools is given here. For a further knowledge of the subject students are referred to the works of Goldammer and Wiebe, and to the publications of the Fröbel Society. At the same time, we would urge the necessity of attending duly organised classes, as many of the gifts require a great deal of practical explanation

LIFE OF FRÖBEL.

FRIEDRICH FRÖBEL, the founder of this system of education, was the son of a German clergyman. He was born at Oberweisbach, in Thuringia, on 21st April, 1782. His mother, a kind-hearted woman, died before he was twelve months old. His father, as clergyman of his place and the seven surrounding villages, was so much occupied that he had no time to look after his children, and hence they were left to the care of the servants. In 1786 his father married again, but this made things worse for Friedrich. There was no sympathy between him and his stepmother, and his father became very stern and harsh with him. Friedrich passed the greater part of his time like a prisoner, being compelled to keep within the boundary of his father's house and garden, and being denied the society of other children. This restraint, however, taught the lad to depend upon himself, and caused him to study closely the flowers, etc., of the garden. He was forced to appeal to nature for all he required, and it was undoubtedly this close communion with nature that developed his wonderful powers of observation and comparison, and led him later on to attach so much importance to its study. At the age of eleven years a new life commenced for him, for his uncle, the Rev. Hoffmann, a kind and gentle man, finding out the kind of life his nephew was leading, offered to take him and see to his education. His new home was quite the opposite to his former one. Here he found kindness, love, and freedom reigning supreme. He now went to school, and mixed with 40 children of his

own age. He was allowed to roam about the country so long as he returned at a certain time. He soon became aware of the neglected state of his education, and worked hard to recover the lost ground. Under the kind and fostering care of the schoolmaster he grew up strong in mind and body, and his thoughts became healthier and more sound.

After his confirmation he returned home, hoping to continue his studies at the university. His father, however, apprenticed him to a forester, who, being very much occupied, left Friedrich to find out what he could for himself. Fröbel made good use of his time here and formed the acquaintance of a doctor, who introduced him into a new phase of society. At the end of his apprenticeship the forester was anxious to keep such a useful pupil, but Fröbel insisted on returning home, trusting that his father would now consent to his going to the university. On the condition that he should pay his own expenses out of his maternal inheritance, his father consented, and at the age of 18 Fröbel entered the University of Jena. Though he only lived for his study, and never joined in the pleasures of the other students, yet at the end of six months he found himself in debt. He wrote to his father for money, but that being denied, he was sent to prison because he could not pay his debts. He obtained his freedom by resigning his share in the property. On his release he returned home for a short time, and subsequently went to live with some relatives, where he studied practical farming. Some months after he returned home again on account of his father's illness, and now the father began to understand his son, and died blessing him. He was now 20 years of age, and took a situation as forester at Bamberg, and afterwards went to Mecklenburg as private secretary to a gentleman.

His uncle, who died in 1805, made him his sole heir. This supplied him with the means of living, and allowed him to do

whatever he wished. On visiting Frankfort-on-Maine, with the idea of becoming an architect, he became acquainted with a schoolmaster named Grüner, who introduced him to several other teachers. He then commenced explaining his ideas on education, and Grüner, recognising in him a born governor and teacher, offered him a place in the new school he was then establishing. This school, arranged on the Pestalozzian plan, made a profound impression on Fröbel, and caused him to pay a visit to Pestalozzi and his school for teachers, where he was still further impressed with what he saw. He returned to Frankfort for two years, and at the end of that time he became tutor to three children. When 25 years old he settled on a farm with his three pupils, devoting his whole time to their education, and to the development of his own educational ideas. The remembrance of his own unhappy childhood guided him to base his system on the healthy development of children by means of their love of self-activity and free, uninterrupted intercourse with nature. He considered that all scientific instruction should be relieved by and depend on judicious exercise and practical occupation.

He now commenced using his games, invented new kinds of bricks, and worked out the gradual progression for folding paper, cutting out cardboard, and plaiting paper. During all this time, however, he continued to think of Pestalozzi and of the deficiencies in his own methods, and he persuaded the parents of his boys to allow him to take his pupils to Pestalozzi, at Yverdon, in Switzerland. We find him with this great educational reformer in 1808 as teacher and pupil, and we have his own words telling us how much he benefited under Pestalozzi. We next find him studying German and Natural History at the University of Göttingen. Writing to his friends, he says: "I was free, happy, healthy in mind and body; I was gay and contented." In 1812 he went to the

University of Berlin, and formed the acquaintance of several well-known teachers, two of whom—Millendorf and Langethal—afterwards became teachers in his school, and identified themselves with his work for the rest of their lives. In 1813, on the outbreak of war, he joined the army, not on account of enthusiasm for the war, but because he regarded the summons of the King of Prussia as an appeal to his duty, and his conscientiousness would not allow him to continue his studies when his fellow-students were enlisting as volunteers for the protection of their country. In 1814, at the end of the war, he accepted the post of Curator of Mineralogy at the Berlin Museum, where he continued his scientific studies, and still further developed his new educational theories. In his intercourse with the teachers of Berlin he continued to expound his new system of education, especially to Millendorf and Langethal, who became his devoted followers.

His brother, a clergyman at Griesheim, had died and left two young children, and these Fröbel determined to take charge of and educate. He resigned his position at the museum and opened a school at Griesheim, in Thuringia, in November, 1816. Millendorf joined him, and the school, though not a financial success, became too large for the place and was removed to a farm at Keilhau. There they were joined by Langethal, and the three educational enthusiasts worked on, though often nearly overwhelmed by financial failure. When in Berlin, Fröbel had made the acquaintance of a well-educated and wealthy lady, who shared his ideas on education. It was only the difference in their positions that had prevented Fröbel declaring his love; but, as he could no longer do without a wife to look after his household, he wrote asking her to help him to carry out his ideas. We find her joyfully giving up her comfortable house in Berlin to live with her husband in the country, and to help him in his new

undertaking. In spite of many difficulties and great opposition similar schools were started in connection with Keilhau. Owing, however, to the worry of his enemies, we find him accepting the offer of a house in Lucerne. Here he also experienced great opposition, but was assisted by the Government authorities, who sent young teachers to him to be trained. This new experience led him to notice that too much of the children's education was neglected before they came to him, and that for the children to receive the full benefits of his instruction it was necessary to attend to them at an earlier age; hence he concentrated his attention on a graduated system of instruction, commencing almost from infancy. He tried to win over the mothers to help him in carrying out these ideas; and the result of this work was the formation of an association of families, for the purpose of instructing the children from their earliest infancy in a school where there were proper occupations and games arranged for them.

In 1837 the first Kindergarten was established at Blankenburg, in Thuringia, not far from Keilhau. Another Kindergarten was established at Frankfort-on-Maine in 1848, and at Liebenstein, Thuringia, where he was then living, he established a school for training Kindergarten teachers. Although Fröbel's undertakings continued to be financially unsuccessful, his educational system continued to gain many adherents, and many schools were established to carry out his ideas. He arranged for a great meeting of prominent teachers at Liebenstein, and showed them his institution and explained his methods to them. They became deeply interested, praised his work, and promised him their active support. In the midst of these successes he met with a terrible reverse, which might almost be said to have hastened his end, for in 1851 the establishment of Kindergartens was forbidden by the Government of Prussia. This was owing to a book published by

Carl Fröbel, a nephew of the great educationist, on Girls' Schools and Kindergartens, and containing many socialistic ideas. Although Fröbel's system was thoroughly opposed to that advocated by his nephew, he was unable to obtain any redress. In fact it was not till 1859 that the prohibition was withdrawn. While attending a Kindergarten meeting at Gotha, he took cold and died soon after, 21st July, 1852. He was buried at Scheveina, in Thuringia, and a monument, consisting of a ball, cylinder, and cube, was erected on his grave, bearing the inscription, "Let us live for our children," which was one of his favourite sayings.

Fröbel's remembrance of his own unhappy childhood seems to have given him a most earnest desire to make the school life of children as happy as possible, and he therefore founded his system on children's love of activity; indeed, throughout the children learn by *doing*—that is to say, it is during their occupation with the different materials that they gain information and have all their faculties developed and strengthened.

The term "Kindergarten" signifies "Children's Garden." Here the school is likened to a garden, and the children are the plants that have to be carefully trained and cultivated.

The various materials that Fröbel presents to the children he calls "Gifts," and the occupation or work that they do he calls "Play." This last name has, of course, a charm for all children, who will always work very much harder and with much more spirit when at play than at lessons.

It may be suggested by some, why should children have work given to them in the form of play? We would answer such people by asking whether they do not like their work in the most pleasant form possible.

Is it not reasonable, therefore, that little children should have their work in the most pleasing shape?

By this means a love of learning and a desire for information become imperceptibly a part of their nature.

Young children should not be allowed to feel the restraint of sitting still or standing for any length of time, and on no account should they be made to feel that a certain amount must be learned before they are at liberty.

Many and agreeable changes are necessary for the healthy development of mind and body, and the Kindergarten supplies these changes by giving lessons under the name and in the form of play.

All educationists who have tried this system of teaching young children have found that those taught by means of it learn more readily and are much better able to use their hands for the work required of them in more advanced stages. It also proves beneficial to them in after life, giving them habits of industry, neatness, order, and accuracy, and at the same time rendering them self-reliant, as each child has from the beginning had to do his own work. It cultivates the faculties of observation, perception, and invention, and also the power of language, for children are always encouraged to talk and made to describe the various objects that come under their notice. Teachers must admit the educational value of any system that will do this for young children, for we know that habits formed when we are young, whether good or bad, are those that cling to us through life. How careful, therefore, should we be in the training of the young. Mothers should exercise judgment in the choice of nurses, selecting such as are honest, upright women, and not such as would lead young children to deceive their parents in the least particular, for it is often this that is the beginning of untruthfulness and deceit. Even greater care should be exercised in the choice of those to whom the training of the young is to be entrusted.

It has often been urged that it is utterly impossible to teach Kindergarten in the elementary infant school; but if teachers were to look upon Kindergarten more as a *system* of teaching and less as a special branch of instruction, they would understand the whole thing better, and with very little thought be able to work it with great advantage in their schools. This will be readily seen by the following comparison:—Every one has heard of special methods of teaching reading, writing, arithmetic, and for imparting general information; *e.g.*, by means of object lessons, and each one chooses his or her own special system and teaches by means of it. Now, if the infant teacher would look upon the Kindergarten as a special system by means of which she could teach number, form, colour, drawing, elementary reading, and also impart a great deal of general information, besides cultivating the numerous faculties and qualities that have already been mentioned, the adoption of Kindergarten would become more general. It is because teachers look upon it as something extra to be crammed into the already overcrowded work of the day that they have not taken more kindly to it, but when they see that it is really the most pleasant, and therefore the simplest, method of teaching so many subjects they will readily adopt it.

There are many teachers who would willingly introduce Kindergarten into their schools, but they do not know how to set about it.

They have many difficulties to contend with; *e.g.*, the very large classes into which the school is divided (one teacher being allowed for every 60 and 80 children), and the want of technical training of the teachers. Every teacher of Kindergarten, and every book on the same subject, says that to teach Kindergarten the classes must be small and the teachers efficient—trained if possible. This naturally makes a teacher

afraid to try the system; but it will be found that even with a large class a good lesson will be a great gain to the children, and therefore it would be very wrong not to give those children the benefit of the lesson because the teacher cannot fulfil the usual requirements of the system. It would not be right to say that a class of 60 children would gain the same amount of good from the lesson as a class of 15 or 20, because in the latter case the teaching amounts almost to individual instruction; at the same time, it is quite certain that the lesson is much better given to the large classes than not given at all, for there are certain exercises both of mind and body that the children do not get unless taught on this system. Then, again, it is the Kindergarten spirit which, when once it enters into the school, will pervade the whole work that is so greatly to be desired in our infant schools. These schools should be happy places, where the children work very hard, but where the work is always so pleasant and so gradual that it is like play to them.

The teacher, however, must bear in mind that she has a certain amount of work to do; indeed she really has the double task of preparing her lesson and reducing it to the form of play.

Where the classes are large, they must, of course, be given in charge of good teachers: where smaller classes are given to young teachers, these latter may be made very useful by the head teacher if she will instruct them in the methods of teaching, and make them carefully prepare all lessons before giving them. Another difficulty that teachers often have to contend with is that they cannot get the necessary apparatus.

It would be wise in such cases to introduce only a few gifts at a time, and those the least expensive; *e.g.*, paper is the material used for many of the occupations. This is very inexpensive, especially when the teacher cuts her own paper for

paper-plaiting, folding, etc. A box of sticks for stick-laying may be bought for 4d., and the laths for plaiting are not dear.

The most expensive are the first seven gifts. Only I., II., III., and IV., however, are necessary at first. These may be called the permanent gifts. When once bought they last, with care, for many years. Of these gifts the teacher need only buy sufficient for one class, as the classes can use them alternately.

Besides the gifts, the teacher would require a chequered blackboard and slates similarly ruled for the children.

The children also require tables or flat desks at which to work.

It is an improvement if these desks are ruled in one-inch squares, as a guide for the little ones in placing their material.

For a teacher wishing to introduce the Kindergarten system into her school it would be well to consider, first, the *subjects* that may be taught by means of the Kindergarten; *e.g.*, form, colour, number, reading, drawing, objects, natural history, singing, etc. It will be seen from this list that no new subject is introduced into the ordinary work of the infant school; it is only the *method* of teaching these subjects that is new.

Now if a teacher takes her time-table and marks her form, colour, drawing, and some number, reading, etc., to be taught by means of the Kindergarten, she will have introduced a very fair amount of the system into her school, and have afforded her teachers and children great variety in the teaching; *e.g.*, number could sometimes be taught by means of the cubes, another time the sticks could be employed, and on other occasions the tablets could be used.

Form might be taught in one lesson by means of stick-laying, in another by lath-plaiting or paper-folding, paper-cutting, etc. Reading—*i.e.*, the alphabet—could be taught by means of the sticks and rings; even simple words could be

taught. Then if these letters or words are copied on the slates by the children the subject of writing is introduced.

Colour could be taught by means of the balls, embroidering, etc. Many facts in natural history would be imparted whilst the children were engaged in perforating, embroidering, modelling, etc.

Many occupations, such as paper-plaiting, paper-cutting, paper-folding, peas-work, modelling, etc., might be given, not to illustrate one special subject, but in order to gain all the possible good out of the lesson; *e.g.*, in paper-folding, the first part of the lesson would be on the qualities of the paper, of what made, the form of the paper, the different lines, angles, etc.; the second part would be the folding of the object; and the third part a conversation on the form or object made.

THE GIFTS.

There are about twenty gifts which Fröbel presents to the children. The following list shows of what these gifts consist:—

Gift I. is an oblong box containing six worsted balls of different colours—three primary colours, red, blue, and yellow, and three secondary colours, green, orange, and violet. The box also contains six strings corresponding in colour with the balls, and three sticks to form a framework on which to suspend the balls.

Gift II. is an oblong box containing a sphere, cube, and cylinder. There are two cubes in the box—one is plain, and the other has holes through it to show its rotation on its axis. The sphere and cylinder may also be rotated. Sometimes there is a black sphere to introduce the element of colour.

Gift III. is a cube cut once each way into eight one-inch cubes.

Gift IV. is a cube cut three times horizontally and once perpendicularly into eight oblongs.

Gift V. is a large cube cut twice each way into twenty-seven one-inch cubes; twenty-one of the cubes remain whole, three are cut diagonally into halves, and three twice diagonally into quarters.

Gift VI. is a cube the same size as Gift V. cut into twenty-seven oblongs. Of these oblongs eighteen are whole, six are divided breadth-wise each into two squares, and three length-wise each into two columns.

Gift VII. consists of square and triangular tablets for laying figures.

Gift VIII.—Sticks or staffs for laying figures.

Gift IX.—Whole and half-rings for laying figures.

Gift X.—Material for drawing.

Gift XI.—Material for perforating.

Gift XII.—Material for embroidering.

Gift XIII.—Material for paper-cutting and mounting the pieces.

Gift XIV.—Material for paper-plaiting, weaving, or braiding.

Gift XV.—Slats for interlacing.

Gift XVI.—The jointed lath or slat with many links.

Gift XVII.—Material for intertwining.

Gift XVIII.—Material for paper-folding.

Gift XIX.—Material for peas-work.

Gift XX.—Material for modelling.

These gifts may be divided into five groups, viz., solids, surfaces, edges, points, and shapeless material.

In this classification it will be seen that Fröbel first presents the whole solid to the child and then takes its parts, arriving at last at the "point," the smallest part of the whole solid.

In the shapeless material children have a mass of clay given to them, which they have to mould into shape.

Group 1.—Solids: whole and divided.

This includes the first six gifts.

In Gifts I. and II. whole solids are given to the children, and in Gifts III., IV., V., and VI. divided solids.

Group 2.—Surfaces.

Gift VII. is the first of the second group of gifts. It consists of square and triangular tablets which represent the surfaces of the cube and divided cube.

To this group also belong Gifts XIII., XIV., and XVIII.

Group 3.—Edges.

These are represented by Gift VIII., the *straight line*, Gift IX., the *curved line* (these two are "embodied" lines), and Gift X., the *drawn line*. Gifts XV., XVI., XVII. may also be placed in this group, though really they form the transition from the surfaces to the lines.

Group 4.—Points.

The points are represented by perforating, Gift XI., and by the peas in peas-work, Gift XIX.

Group 5.—Shapeless material.

This is given to the children in the form of clay; they have to mould it into the shapes they have already learnt, and subsequently into new shapes.

It must not, however, be understood that it is necessary that every pupil should go through all the occupations consecutively, commencing at I. and ending at XX. It will be seen that several occupations can be taken together, and some of the

latter may precede the former if the simple portions of these gifts be given.

When arranging the work for the schools the *object* of each occupation should be taken into consideration.

As the materials furnish the elements of number, form, and colour (some containing more of one element than others), they should be so arranged that these elements enter into the work of each week, and thus lay the foundation of future development in the school.

Number.—The gifts best adapted for the teaching of number are, Gifts III., IV., V., VI., VII., VIII., and XIV.

Form is introduced in every gift, principally, however, in Gifts I., II., III., IV., V., VI., VII., VIII., IX., X., XIII., XV., XVI., XVII., XVIII., XIX., and XX.

Colour is taught by means of Gifts I., VII., XII., XIII., XIV., XVII., and XVIII.

Besides the twenty gifts already alluded to, there are also many gymnastic games in which the children imitate the actions of animals and various workmen.

These games are accompanied by vocal exercises. They principally provide for the physical education of the child, although the conversations and descriptions that must accompany them necessarily help the children intellectually, and in the attention that must be paid to the manner in which the children move and behave to each other the moral education is certainly not omitted.

The games should be played in the garden or playground when the weather permits.

The following games are a few of the most common:—The Peasant, The Pigeon-house, Hare in the Hollow, The Sawyer, etc.

There are very many more, and the ingenious teacher will find many simple pieces of poetry that she will be able to

adapt for Kindergarten games by teaching the children actions suitable to the words. Simple tunes should be chosen for the children to sing.

GIFT I.

GIFT I. consists of an oblong box containing six worsted balls. The balls are of different colours—three primary colours, red, blue, and yellow, and three secondary colours, green, orange, and violet. The box also contains six strings corresponding in colour to the balls, and three sticks of wood which form, when fitted together, the two uprights and cross beam from which the balls may be suspended.

This gift is suitable for the youngest children; for those in the babies' room.

By means of it the children gain ideas of form, colour, and number. While using the ball they should be carefully taught to use good language with pure pronunciation. Every word suggested must be the exact one suitable for the object in view. Every word uttered must be rendered by the teacher with its purest sound. Thus early are laid the germs of correct articulation, purity of language, and freedom of expression.

In the various exercises with the balls the muscular development of the children is carefully attended to, the games bringing the muscles into play, and aiding their development.

Habits of order and precision are inculcated, and the powers of comparison, attention, and observation exercised and excited.

The games and exercises with the ball are numerous and varied.

The teacher, bearing in mind that the children who use this gift are "babies," must carefully keep in sight that a great deal of repetition is necessary.

To show more clearly the use of this gift the following examples of lessons or plays are given.

N.B.—During the early lessons the children should only have one ball each, but in subsequent lessons this number should be increased to two, three, four, five, and six.

The ball may be given to the children either free, *i.e.*, without the string, or suspended, *i.e.*, with the corresponding string attached to it.

The children may be exercised with either of these balls. The suspended ball is principally used for giving ideas of motion, such as rolling, drawing, swinging, twisting, etc.

1st Lesson.—Aim.—To introduce the ball to the children. To make them familiar with its general characteristics.

To teach them correct pronunciation, and to increase their use of language.

Method.—The children are to be provided with one ball each. The balls should be distributed by the children passing them from hand to hand: this gives the teacher the opportunity of inculcating the habit of order, of teaching the children to pass things quietly and gently, and of making them polite to each other.

When each child has a ball, let him place it in front of him; the teacher should then begin to question the children, taking care that her questions are simple and pointed, and that her manner is pleasant and encouraging.

"Now, little ones, what are we going to play with this morning?" "Our balls." "Do you see that I also have a ball? Well, I am going to hold my ball up. Now you all do the same, and then say, 'We are all holding up our balls.' I want you all to look at your balls. What can you tell me about them?" "Round." "Yes, but I want you to say more than 'Round;' you should say, 'Our balls are round.'

Well, Lily, what can you say about your ball?" "Soft." 'Now, children, what should Lily say instead of 'soft?'" "My ball is soft." "Yes; or she might have said, 'It is soft.'" All the children should then be directed to feel their balls, and afterwards repeat, "All our balls are soft." "Look at your balls again and try to tell me of what they are made. Well, what are you going to say?" "Our balls are made of wool." "I should like Mary to tell me something about her ball." "Blue." "But, Mary, you can say something better than 'Blue.'" "My ball is blue." "Oh, that is much better." Mary should then hold her ball up so that it can be seen by all the class, and the children should repeat, "Mary's ball is blue." The teacher should then ask the children to look at their balls, and those who have balls like Mary's should be asked to hold them up. Of course several children with other coloured balls will hold them up. These should be directed to place theirs by the side of Mary's, to notice the difference, and then be told to put them down. In this way the children would be led to notice that all their balls were not alike, and they should repeat, "Our balls are not all of the same colour." "Now, who can tell me all we have found out about the balls? Repeat 'Our balls are round,' 'Our balls are soft,' 'Our balls are made of wool,' 'Some balls are blue.'" This would be found sufficient for one lesson; the balls should be returned, being passed in the same way as at the beginning of the lesson.

2nd Lesson.—Aim.—To teach the children to distinguish between their right and left hands, and the value and use of such words as *in*, *on*, *upon*, *under*, *over*, etc., and also the position designated by these words.

Method.—The balls to be distributed to each child as before, and the children to be questioned as to what they learnt about the balls the last time they saw them.

"Now, see what we are going to do with these pretty balls to-day. How many hands have you? Hold them both up. Now put them down again, and then hold up the one nearest to the window. Now hold up the other one. We have different names for these hands. Which of you can tell me the name of the one nearest the window? Yes; it is the right hand." The children should then be asked to hold up their right hands, and should then repeat, "We are holding up our right hands." "Now, put your right hand on your head and say, 'My right hand is on my head.'" The children should then be told to take up their balls with their right hands and repeat, "My ball is in my right hand." "Now, hold up the other hand. Do you know what name we give to it? You are right, Mary; it is called 'the left hand.' Now all of you say, 'We are holding up our left hands.'" Much the same exercises should be done with the left hand as were done with the right.

"Now tell me in which hand John has his ball." "In his right hand." The teacher then taking the ball in her right hand should put her hand over her head and ask the children to tell her the position of her right hand. "Now take your ball in your right hand and put your hand over your head and repeat, 'My ball is in my right hand over my head.'" The teacher then holding the ball over the table would say, "Where is my ball now? Hold your balls over the table and repeat, 'My ball is over the table.' Now hold your balls over something near you. Where is yours, Jane?" "Over the chair." The class to repeat, "Jane's ball is over the chair." "Now take your balls in your right hands again and hold them over your left hands, and each repeat, 'My ball is over my left hand.' Now take your balls in your left hands and hold them over your right hands and say, 'My ball is over my right hand.'" By similar exercises the meaning of the following words, *on*, *upon*, *under*, *beneath*, *inside*, etc., would be taught.

The balls should now be passed to the teacher, and put carefully away in the boxes.

3rd Lesson.—Aim.—To teach one of the primary colours, such as blue.

Method.—The balls having been passed round the class as before, the children should be asked to say all they can about them. Their attention should be directed to the different colours of the balls. "Each of you who has a blue ball hold it up. Now look at Tommy's ball and tell me if that is blue?" "No; it is not." The teacher should then direct one of the children who has a blue ball to put it beside Tommy's, and after he has noticed the difference in colour he should be told to put his ball down. "I see there are several children without blue balls. Now each one come to me and you shall pick a blue ball out of this box." After carefully correcting the mistakes that will be made in picking out the wrong coloured balls, the teacher would say, "Hold your balls in your right hands and say, 'I have a blue ball in my right hand.' 'We all have blue balls.' Can you see anything in the room that is of a blue colour besides your balls? Quite right; Susan's dress is blue, Harry's ribbon is blue. Sometimes when you are walking in the street and look up at the sky you will often see some blue. On what kind of day do we generally see the blue sky?" "On a nice fine day." The teacher, producing a board with many colours on it, should ask some of the children to point to the blue. The children then to be asked to name all the things they know that are of a blue colour.

4th Lesson.—The Suspended Ball. **Aim.**—To teach the ideas of swinging, drawing, winding, &c.

Method.—The balls having been distributed as before, the children should be asked to name the different colours, and afterwards to pick out from the boxes the corresponding

coloured strings. The teacher, after showing the children how to fasten the string to the ball, should get them to fasten their own. The teacher then, holding the string, should let the ball swing, and get the children to do the same. "What are all the balls doing?" "They are swinging." "Have you ever seen anything else swing?" "Sometimes boys and girls swing." "Well, let us think that the ball is a little girl, and let us make her swing—that is right. But you must not swing too fast or too high. Do you like going very high when you are swinging? No; you must not go very high or you might fall. Why does not the ball fall? Are you held like the ball? Now let your ball swing very gently like mine, and tell me what you have seen swinging gently from side to side. Yes; it is the part of the clock called the pendulum. What does it say?" "Tick, tick." "Now all swing your balls, and say, 'tick, tick.'" The other motions should be similarly explained.

5th Lesson.—Songs and plays with the ball.

The balls having been passed and the children having been questioned about them, the teacher should put her hands together and place the ball in the centre of them. The children should then be directed to do the same. The teacher should then sing:

"My little ball is lying here
Within my hand so still.
I'll rock it now it is so dear,
And guard it from all ill."

The children while repeating this are to suit the actions to the words—thus, when they sing "I'll rock it now," they should move their hands to and fro.

The sentence "Guard it from all ill" should be carefully explained to the children. "What do we have to rock? You do not know. Well, what have you seen your mother rocking?

Let us think the ball is a little baby. You must be very careful, then, when you rock it, or you will hurt it. If you rock it too hard what will happen? Do you ever have to rock your baby at home? Where is baby when you rock him? What shall we call our hands then? Now let your balls lie still; now rock them; and now you may sing that song again, and then you shall sing another."

"While little baby lies before me,
How very quiet I must keep.
I'll gently rock it in its cradle.
And try and send it off to sleep."

During the course of this lesson it is expected that the teacher, while interesting the children, will ask them concerning the way their mothers treat the baby; how they can help their mothers by keeping quiet when baby is asleep, and how they can help to get baby to sleep by rocking the cradle, etc.

"Now, children, to-day we are going to have another song, and I want you to show me how nicely you can sing."

"Do you see this little nest,
Inside which the birdies rest?
Do not touch it, this I pray,
While the birds are far away
Finding food on which to live.
Do not touch it, this I beg,
For 'twould spoil the pretty egg,
Which warm and snugly here is lying
Waiting for the homeward flying
Of the birds to their soft nest.
If they find that all is right,
It will give them great delight
To sing to you a pretty song
That will please you all day long."

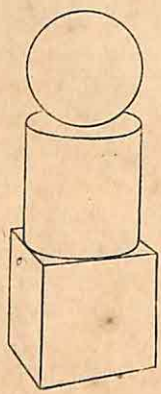
The children should make a nest with their hands or handkerchiefs; the very fact of asking for the latter would be useful in making the little ones remember to bring them. Then would follow a conversation on birds, their nests, food, eggs, etc. In this agreeable and interesting way several lessons would be given, the teacher remembering that the lessons are suggested by the song, which should be often repeated.

Many other songs will readily be thought of by interested teachers. Any teacher imbued with the proper teaching spirit, and thinking of her little ones, will find great pleasure in adapting songs to suit their lessons, or rather, one should say, will be able to draw useful lessons from the songs.

There are several songs published which could be used to illustrate the movement of the pendulum (Lesson 4), etc. The colour lessons also would be more attractive if songs were used.

GIFT II.

THIS gift consists of an oblong box, containing a sphere, a cylinder, and a cube in wood. They all have eyelets attached to them, but only the two latter are pierced in certain directions. Some strings and sticks are also in the box. Sometimes also a black sphere is introduced as an element of colour to teach "light," "dark," etc. In using this gift the children learn by means of contrasts or comparisons, and we at once enter upon a more precise knowledge of surrounding objects by causing the children not only to observe and note the resemblance of the sphere to the ball, but to draw out clearly the differences between these, the cube and the cylinder. The child having once grasped the idea of comparison, proceeds



to contrast these objects with others he has used or seen, and in this way, under the skilful guidance of the teacher, Fröbel's strongest position is demonstrated to be both natural and true. The development of the child's faculties is brought about by means of comparison, all knowledge being based on what might be called the natural law of contrasts.

1. **The Sphere.**—The three objects having been placed before the children, the teacher naturally asks which of them they have seen before. The children, recalling the pleasant exercises passed with the ball, will, of course, select the sphere.

One of the balls (Gift I.) should be placed before the class with the sphere, and the process of comparison should then begin. The children will readily point out that both objects are round—they both roll. Then if the children are supplied with a ball and a sphere they will point out that the ball is soft and rough, of a different colour, made of wool, noiseless, will bounce or rebound, whereas the sphere is hard and smooth, white in colour, made of wood, makes a noise when it falls, and will not rebound. The class should then be told that this "new ball" is called a "sphere" or "globe." Of course, in introducing these new words to the children the teacher must be very careful not only to pronounce them very accurately and distinctly, but to see that the children are also able to exactly repeat the words, the object of the lessons in all cases being to develop the conversational powers of the children and to produce purity of language.

Exercises with the Sphere.—These are very similar to those with the ball, but more limited:

1. Children to name things similar to the sphere.
2. Games with the sphere.
3. The sphere suspended.

2. The Cube.—The children having become familiar with the sphere, should have the cube placed before them. The comparison of this with the sphere causes the children to discover great differences. They readily notice that the sphere is easily moved, whereas the cube is naturally in a state of rest and requires force to move it. While in motion the sphere always presents the same appearance, but the cube shows a diversity of form. Then, again, while the sphere presents but one unvarying surface, the children will notice there are several faces or sides to the cube. Under the direction, and with the help of the teacher, these should be counted by the children, who should then repeat, "The cube has six sides or faces." In a similar manner the children would learn that the cube has eight corners and twelve edges. The children's attention should be drawn to the faces of the cube, so as to cause them to notice that they are all exactly alike, and that the edges are of equal length; that they are square. To prove the exactness of this a piece of paper might be cut the size of one of the faces, and then put on each of the others. The children should then repeat, pointing at the same time to the parts named, "A cube has six square faces, twelve edges, and eight corners."

Exercises with the Cube:

1. The children to name anything like the cube; *e.g.*, box, piece of soap, piece of sugar, block of stone, etc.

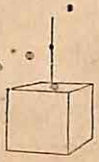
2. Placed in different positions, the number of faces, edges, and corners to be counted.

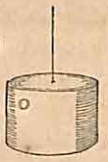
3. Movements with the cube.

(*a*) To and fro like a pendulum.

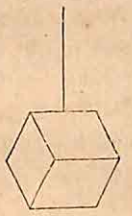
(*b*) Drawn along on one of its faces.

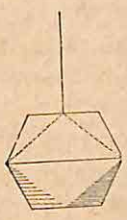
(*c*) Rotating on its axes.



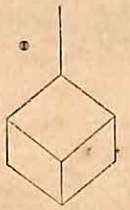


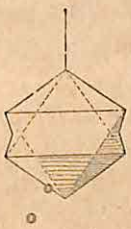
(*c* 1) **The axis of the face** is a line drawn from the centre of one of the faces to the centre of the opposite one. When turned quickly round on this axis we see the form of a cylinder.





(*c* 2) **The axis of the edge** runs from the middle of one edge, passes through the centre of the cube to the middle of the opposite edge. When the cube rotates on this axis a wheel or conic form is shown.





(*c* 3) **The axis of the corner** runs from one corner through the centre to the opposite corner. When the cube is turned quickly upon this a double cone is produced.

4. Comparison with the sphere.

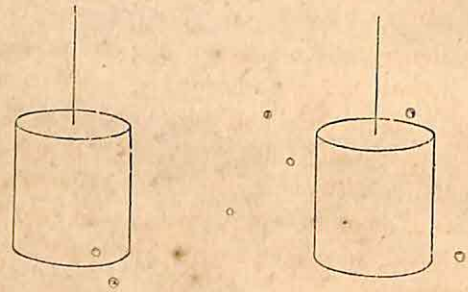
The sphere has only one face, and that is curved. The cube has six square faces, twelve edges, and eight corners. The sphere is movable. The cube is stationary. The sphere in motion always presents the same appearance. The cube on being rotated on one of its axes no longer presents the appearance of a cube, but varying forms according to the axis on which it is turning, as already explained.

3. The Cylinder.—This should now be brought under the notice of the children. On examining it, they will discover that it has one curved face, thus resembling the sphere, and two flat faces, and two edges.

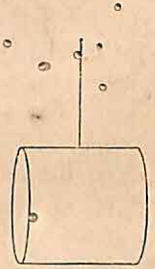
Exercises with the Cylinder:

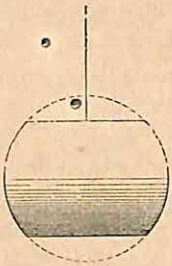
1. This should be compared with other objects; *e.g.*, roller, stem of tree, etc.
2. With the sphere.
3. With the cube.

Movements with the Cylinder.—The cylinder has three axes for points of motion.

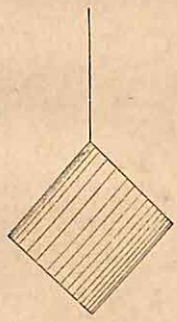


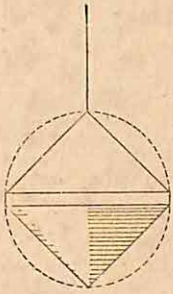
(*a*) When the cylinder rotates on the axis passing through the centre of its flat faces it still presents the appearance of a cylinder.





(*b*) When the cylinder rotates on the axis passing through the centre of its curved face it presents the appearance of a sphere.





(*c*) When the cylinder rotates on the axis passing through its edges it presents the appearance of a double cone.

When the three bodies—the sphere, cylinder, and cube—have thus been separately dealt with, they should be placed before the children for comparison. The children would then discover that all three are white, smooth, and hard; that they are made of wood, and make a noise when they fall; and that they do not rebound.

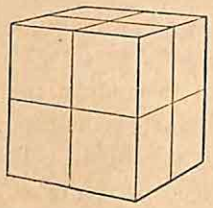
The sphere will roll in any direction, the cylinder in two directions; the cube is stationary. The sphere has only one curved surface. The cube has six square faces. The cylinder

has three surfaces, one curved and two flat. The sphere has neither edges nor points. The cube has twelve edges and eight points. The cylinder has two edges, but no points.

The teacher will notice that the information obtained from the children when the three objects are together under consideration will really form recapitulatory exercises of the previous lessons on each separate form.

GIFT III.

THIS gift consists of a box containing a two-inch cube divided equally in its length, breadth, and height, so as to form eight equal one-inch cubes. In the previous gifts we have only dealt with *wholes*, and these have been sufficient for the child so far; but new desires have been growing in the child's mind.



These desires will be readily found out by observing the child at play.

When a new toy, no matter how beautiful, has been given to him, he turns it about in all directions, and, after thus completing the external examination, he is seized with a great longing to discover its hidden characteristics.

To carry out this desire the child begins to destroy the said toy, and, having done so, he often takes more delight in its fragmentary portions than he previously did when the toy was in its perfect condition.

The child is too often scolded for its destructive ways; but there is not the least doubt that he is not prompted by the mere spirit of destruction, but rather, on account of his inexperience and want of training, he is obliged to proceed in this rough and untutored way to examine the interior of the object before him.

Fröbel naturally proceeds to provide a toy which, while satisfying the child's craving for investigation, and providing materials for his constructive energies, gives the teacher the opportunity of directing these instincts, and gradually instilling into his mind a love of order, neatness, and arrangement of the things around him.

This gift is used with children of three and four years of age, and also with children of five and six. All children take great delight in it, because of the number of its parts and the never-ending variety of forms that can be made with it.

The gift should be presented to the children as a whole, and, after they have had time to examine it and get over the delight of taking it apart, the teacher should draw their attention to the resemblance the whole bears to the cube in Gift II.

In this way the child will naturally be led to contrast this with the other objects he has previously had under his notice.

The next step is to contrast the parts with the whole. To do this the cube is divided by drawing one half from the other, then each of these halves should again be halved, and proceeding gradually in this way the eight small cubes would be displayed. (See Plate V.)

Then the child should be led to notice that each of these parts is an exact counterpart of the whole. The children having each been provided with this gift should be allowed to perform these exercises, and should also be allowed to arrange the parts in various ways. The teacher in the meantime should know in her own mind what she is going to teach, and must carefully see that the children are learning the necessary lessons, though they themselves would, from their point of view, be thinking of their "play."

And what are the lessons that are being thus gradually and imperceptibly learnt by the children?

By observation the teacher will discover that *form* will take an important place in the work, and in dividing the cube, ideas of relative size, comparison, and position will be developed.

Then, again, the number of pieces in the gift provides ample means for teaching number.

Much useful information will be given to the children while they are engaged in building the different forms. They will acquire many new words, and a better style of expressing themselves while talking about their buildings.

The teacher must remember that the great thing to be kept in mind is that, while the child is engaged in play, he should learn to express himself with the utmost clearness and precision; and this can only be done by careful watching on the part of the trainer during the instructive conversation that should be carried on between teacher and pupil.

The different forms made with this gift have been classified by Fröbel into Forms of Life or Object Forms; Forms of Knowledge or Instructive Forms; and Forms of Beauty or Artistic Forms.

The first—Forms of Life—represent real objects, such as are met with in every-day life. The second—Forms of Knowledge—are such as afford instruction relative to number, order, proportion, etc.; they enable the child to measure things correctly, thus early developing in him the power of determining the relative size and measure of objects, and laying the foundation of sound judgment, exact thought, and correct comparison. The third—Forms of Beauty—are figures representing only ideal forms, yet so regularly constructed as to present perfect models of symmetry and order in the arrangement of the parts. The great use of these forms is to train the eye, to cultivate a love for symmetry and order, and to develop an artistic taste.

1. **Forms of Life.**—These should be built by the youngest children, because they are more familiar with them than with the others. The children take great delight in making with their toys representations of something that they know and can see, such as (see Plates I. and II.) a throne, chair, table, wall, garden-seat, engine, sentry-box, sign-post, tunnel, well, bridge, clock, mine shaft, cross, etc.

These objects will readily suggest to the mind of any teacher the kind of information the children should gain while thus playing with the cubes.

The teacher and children should all work together, making the various things suggested either by her or the class.

Generally the teacher should make the object, and call on the children to imitate her. Sometimes, however, some of the children should be asked to build something, the teacher and class following, and at other times an object might be named, and then the children should construct it without seeing a copy.

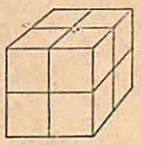
When all the children have succeeded in building the form, it should be carefully examined, a name found for it, and then the comparison should be made between it and the object it represents. A full description of the object, and as much information concerning it as the children are capable of understanding, should be given.

The teacher might have suggested to her such objects as cannot be built up or erected. These should not be rejected by the teacher, but she should show the class that they can be represented by laying the cubes on the table.

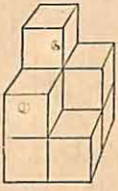
Among these forms we should have a key, a hatchet, corkscrew, bottle, table. (See Plate II.)

A box of cubes should be passed to each child. It should be described as to its number of faces, edges, corners.

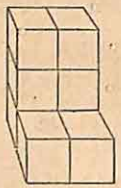
The box should then be opened (see Box Drill, p. 40), and the children will see that it contains something of the same



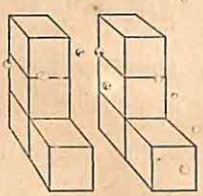
Cube.



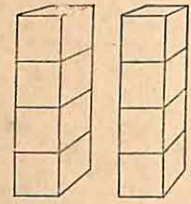
Throne.



Large Chair.

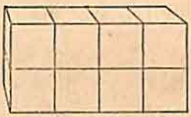


Small Chairs.

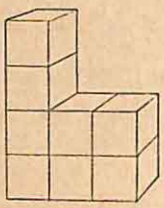


High Posts.

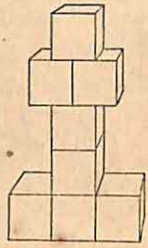
High Wall.



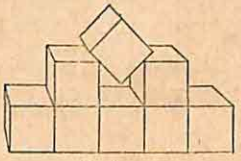
Low Wall.



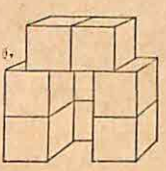
Church



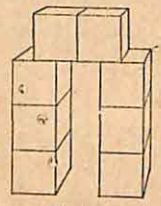
Cross



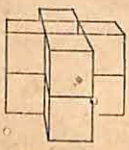
Clock.



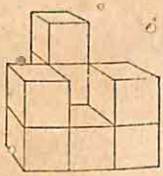
Sentry Box.



Gate.



Mine Shaft.



Arm Chair.

Plate 1.

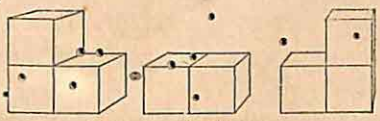
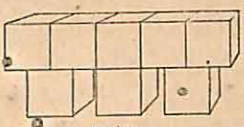
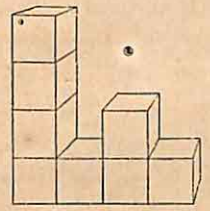


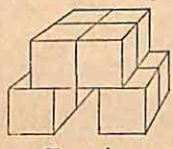
Table and Chairs.



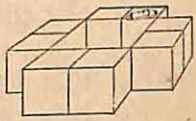
Bridge.



Engine

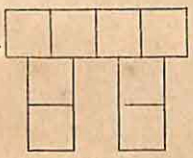


Tunnel

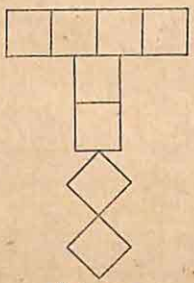


Well.

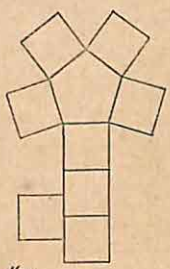
LAT FIGURES.



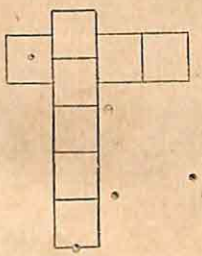
Table



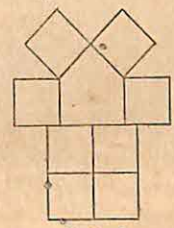
Corkscrew.



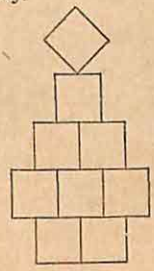
Key.



Hatchet.



Padlock



Bottle.

Plate II.

shape as the box, only a little smaller. The children might then count the number of faces, edges, and corners, and be told that we call this a cube.

They should then be allowed to push the cube, when they will discover that it falls to pieces. These pieces should be counted and each one examined; they will then see that it is a cube like the large one and like the box.

This would really be found sufficient for one lesson, especially as the box drill will be quite new to them.

The drill is as follows:—

1. Draw out the lid about half an inch.
2. Turn the box over.
3. Draw out the lid and hold it up in the right hand.
4. Lift off the box and hold it up in the left hand.
5. Place the lids in the boxes.
6. Place the boxes orderly upon the table.

In subsequent lessons the children should be allowed to build some of the various forms of life, and useful information should be imparted to them by means of conversation as the building progresses.

For instance, suppose the children were to build a train, when all the forms were built correctly the teacher would ask—"Have you ever seen anything like this? What shall we call it?" The teacher should then lead a conversation about a train. When do you go in the train? What must you get before you go into it? Where do you get the ticket? What must you give for it? Where do you stand while waiting for the train? On what part of the platform ought you to stand? Why? What ought you to do when the train comes? What must you be careful about when in the train? What must you do when the train stops at the station you want? A description of the train, of the men engaged on the train and in the station, of the different things seen on the platform,

etc., would also be given by the children, assisted by the teacher.

Some of these would form the subjects for future lessons.

2. **Forms of Beauty.**—These forms are very numerous, and are easily made. Four of the cubes should be made to form the central figure or ground form, and the others should be placed round in a variety of symmetrical positions.

But it must be remembered that in order to get forms of symmetry every change of position on one side must be accompanied by a corresponding movement on the opposite. These forms, sometimes called star forms, are built only one cube high, and consequently represent surfaces.

The most natural ground-form would be the one formed by removing the four top cubes, thus leaving a solid square.

The removed cubes are placed at the centre of each side of this solid square. (Plate III., A, fig. 1.) By moving each cube on to the cube to the right of it the "windmill" is produced (fig. 2); this would lead to a conversation about the windmill, and a song might be sung about it. By moving each cube half a square to the right, fig. 3 will be formed, and so on. Another ground-form consists of a diagonal cross (Plate III., B, fig. 10), another of an upright cross (Plate IV., C, fig. 16), the cubes being moved round these in a similar way to that of the previous ground-form. Many other forms of beauty will occur to the thoughtful teacher, but want of space prevents them being described here.

3. **Forms of Knowledge.**—As it has been already said, these afford instruction relative to *number*. By means of the cubes the children are able to count, add, subtract, multiply, and divide. They first should learn to count to eight forwards and backwards.

They should also be taught to add and subtract 1, 2, and 3, as far as 8, thus: The children, placing one cube and then

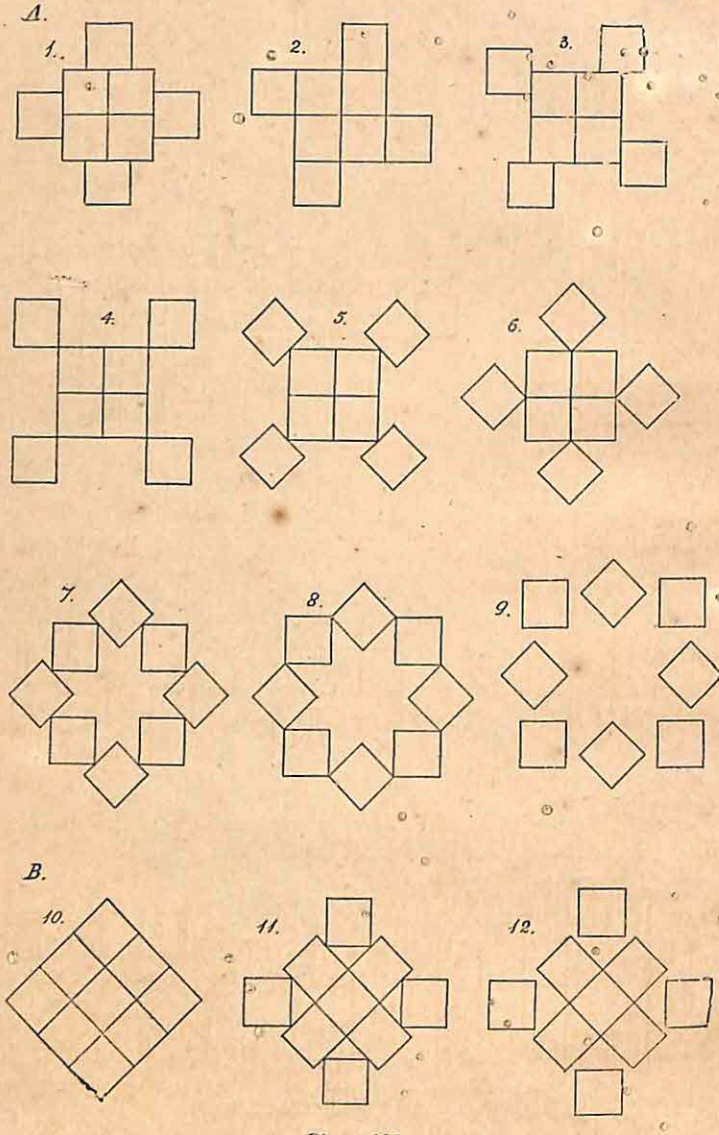
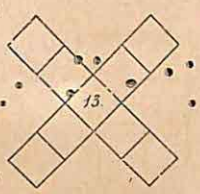
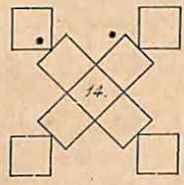
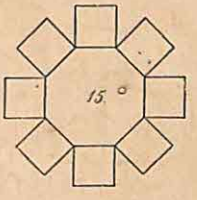


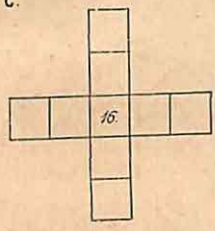
Plate III.

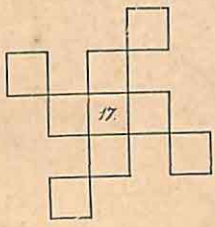


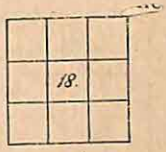


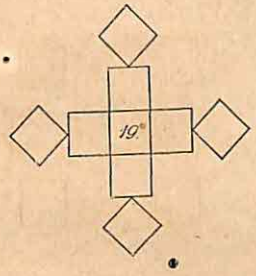


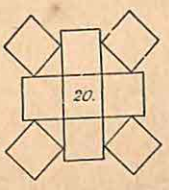
C.

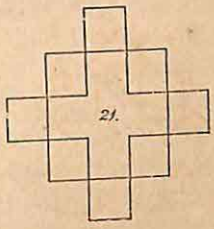




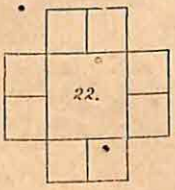


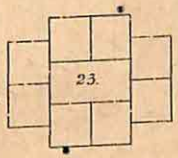






D.





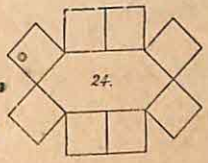


Plate IV.

another by the side of it, say "1 cube and 1 cube make 2 cubes." Next place 2 cubes and 1 cube, and, after adding them together, say "2 cubes and 1 cube make 3 cubes." Next place 3 cubes and 1 cube, and, after adding them together, say "3 cubes and 1 cube make 4 cubes," and so on up to "7 cubes and 1 cube make 8 cubes."

The children should repeat this several times while pointing to the cubes, and afterwards should be asked a few simple questions, only referring to the cubes when a mistake is made.

To teach subtraction the children should put out 1 cube, then take 1 cube away and repeat "1 cube from 1 cube leaves no cube."

Then put out 1 cube and add another. Then repeat "1 cube and 1 cube make 2 cubes;" take away 1 cube from the 2 cubes, there is 1 cube left. Repeat "1 cube from 2 cubes leaves 1 cube." Then put out 2 cubes and add another, which makes 3 cubes; take one cube away, two cubes are left. Repeat "1 cube from 3 cubes leaves 2 cubes." This should be continued until the children learn "1 cube from 8 cubes leaves 7 cubes," at every step founding the subtraction on the addition which has been already learnt.

The addition and subtraction of 2 and 3 should be treated in the same way. To teach multiplication of 2, first place out two cubes, ask "How many cubes?" "How many twos?" Then children repeat "1 two makes 2." Another two being placed in the same row, the children count them "1 two," "2 twos;" add them together, then repeat "2 twos are four." Another two to be placed in the same row, children count them, "1 two," "2 twos," "3 twos;" add them together, then repeat "3 twos are 6."

Another two to be placed in the same row, children to count them "1 two," "2 twos," "3 twos," "4 twos."

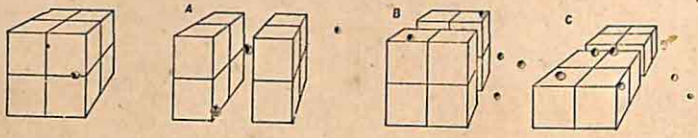
This table should be repeated several times, children pointing to the cubes, and afterwards simple questions should be asked, reference being made to the table if necessary.

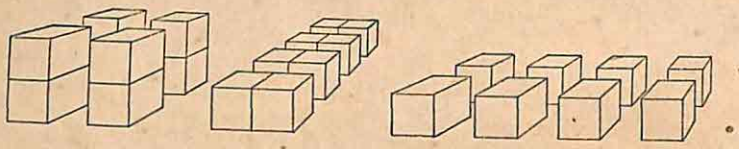
Division is the reverse of multiplication. The table is formed in the same way, and the children are asked "How many cubes are here?" "2." "How many twos?" Then repeat "There is 1 two in 2." Children then count out four cubes. "How many cubes?" "Four." "How many twos?" Then repeat, "There are 2 twos in 4," etc. The cube may also be divided to give the ideas of halves, quarters, eighths, etc. (See Plate V.) *E.g.*, the children should have the whole divided cube in front of them, and the teacher, dividing her cube into two parts (Plate V., A), gets the children to imitate her. "What have I done?" "Now what have you done?" Repeat, "I have divided my cube into two parts." The parts to be examined. The children will discover that each part is exactly like the other, that each contains four cubes. To be told that each part is one-half, 'How many halves?" Join the cube again, and then, dividing it, repeat, "I divide my cube into two halves."

Now the cube can be divided into halves another way. The teacher, lifting off the top cubes (Plate V., C), says, "What have I done?" "Yes, I have divided my cube into two parts. What can you tell me about each part?" "Each consists of four cubes; each is one half." "Now, can any one find another way to divide the cube into halves?" (Plate V., B). "That is right; all see how Mary has done it. She has taken the front from the back part."

The halves can then be divided to show quarters, and, if required, eighths.

The children will soon learn that four quarters make one whole cube, and that two quarters make one half, and so on





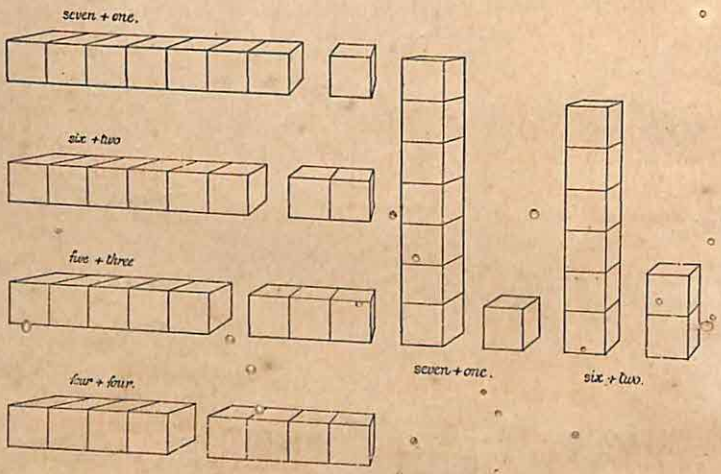
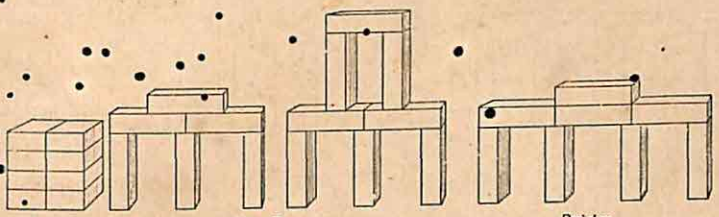
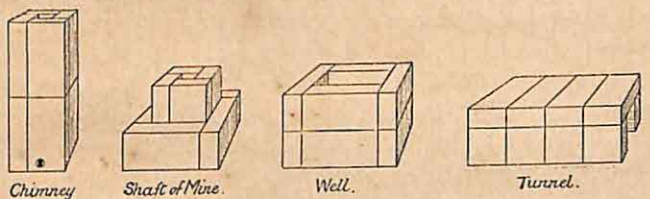


Plate V.


Cube.
City Gates.
Bridge.


Chimney
Shaft of Mine.
Well.
Tunnel.


Garden wall.
School yard.
Stables.

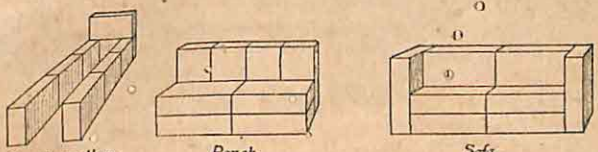

Skating gallery.
Bench.
Sofa.

Plate VI.

There are some rules that should always be observed in building these various forms.

The following are some of the most important :—

1. The cubes must always be presented to the children as one whole cube.

2. The child should leave the cubes as one whole cube, *i.e.*, should be taught at the end of the lesson to neatly return the cube to the box. (See Box Drill.)

3. All the cubes must be used.

4. New forms should spring as it were out of the old—that is to say, there should be the least possible alteration, so that the child can see the old one merged into the new form.

5. The teacher should always talk about the objects made, and encourage the children to do the same.

6. A name should be given by the children to the object made, and if possible the teacher should keep to that name.

7. The teacher must be careful to guard against the children destroying anything they have made; she must check all untidiness or carelessness, and prevent children taking one another's cubes.

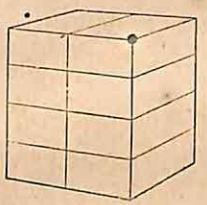
8. Encourage the children to invent forms, and guard against sameness.

9. As an encouragement the teacher, with the assistance of the children, might build a large building with several of the children's cubes.

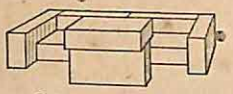
10. The cubes must be put away in the same order as they are received.

GIFT IV.

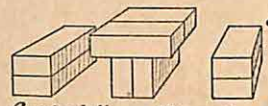
Forms of Life.—This gift consists of a box the same size as in Gift III., containing a cube, cut once vertically and three times horizontally, thus producing eight oblong pieces, each two inches long, one inch wide, and half-an-inch thick. These blocks are often called bricks, because they have the same relative measurements as the ordinary bricks.



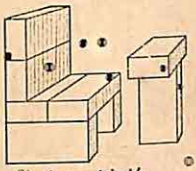
This gift may be used by the same children that use Gift III., and is introduced to them in the same way. The boxes are passed, examined, and then opened. The children notice that at first the gift appears the same as the third, but when they knock the cube, and it falls into pieces, they discover that it is different. They count the pieces and find that there are eight, as there are eight cubes in Gift III. One piece of each of these gifts, *i.e.*, III. and IV., should now be examined and compared with each other. The children will find out that each piece has six faces, eight corners, and twelve edges; but whereas the faces of the cube are all of the same shape and size, the faces of the new piece vary both in shape and size. The children should be led to notice that there are three different kinds of faces, two of each shape and size. By means of this gift the children become familiar with the oblong, and are very soon able to readily distinguish it from the square. The difference between the length, breadth, and depth of a solid is also shown by means of this gift. This gift may be used for precisely the same purposes as the former one, viz., for making forms of life, forms of knowledge, and forms of beauty. The forms of life made with this gift are really prettier and more numerous than those



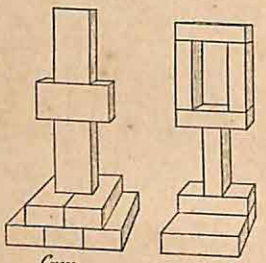
Sofa and table.



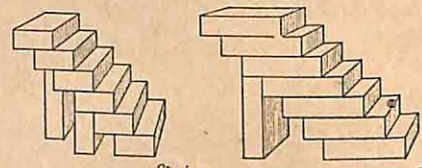
Garden table and two seats.



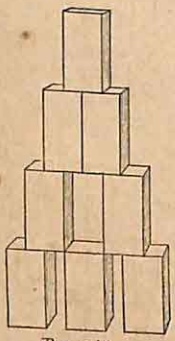
Chair and table.



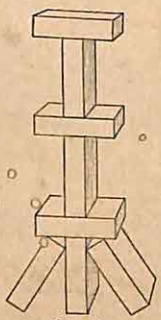
Cross.



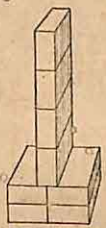
Stairs.



Pyramid.



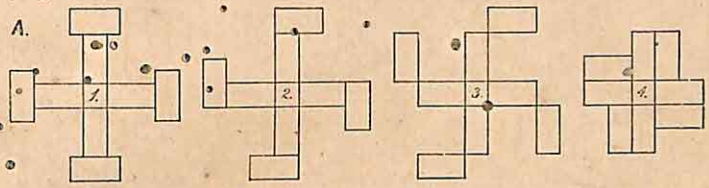
Stand.

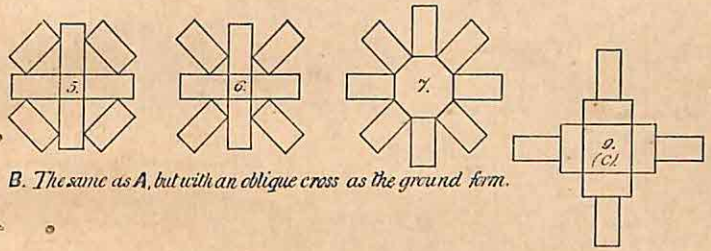


Monument.

Plate VII.

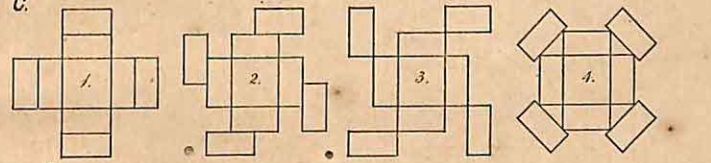
A.





B. *The same as A, but with an oblique cross as the ground form.*

C.



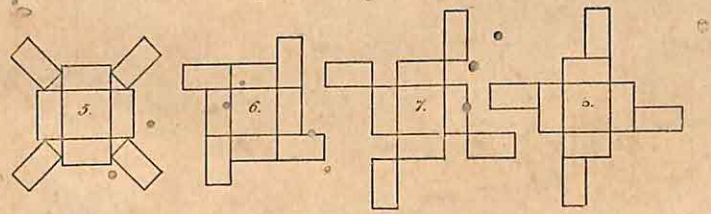
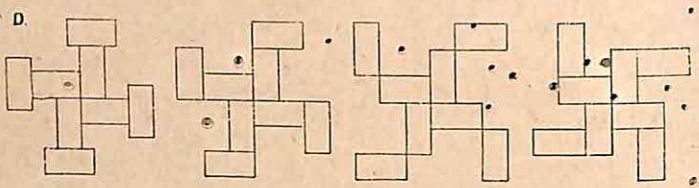
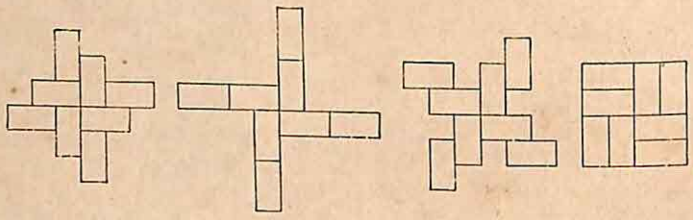


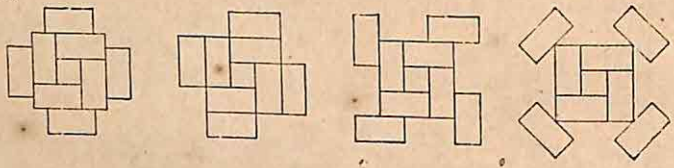
Plate VIII

D.





E.



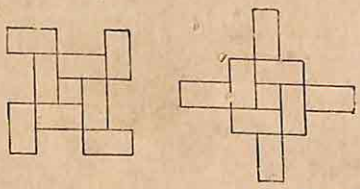
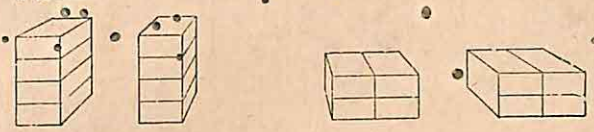
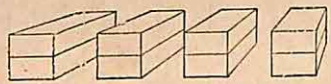


Plate IX.

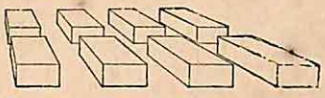
A. *Halves.*



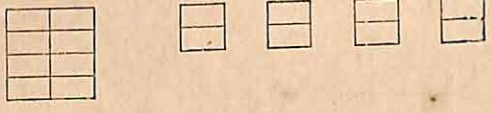
B. *Quarters.*



C. *Eighths*



D. *Squares.*



E. *Oblongs.*

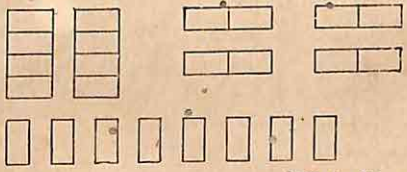


Plate X.

made with the third gift, owing to the greater variety in the dimensions of its parts. (Plates VI. and VII.)

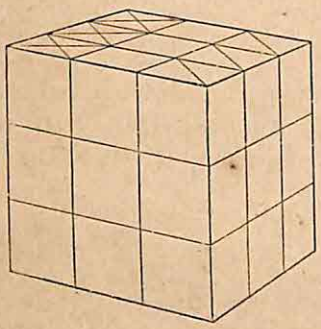
The forms of beauty are also more numerous, as the figures can be subjected to a variety of changes by simply placing the blocks on their long or short sides; or, as the children say, by letting them "stand up" or "lie down." (Plates VIII. and IX.)

Number can be taught as in the preceding gift. Squares and oblongs of different sizes can be made. (Plate X.)

All the rules for building given in connection with the third gift apply equally to the fourth.

GIFT V.

THIS consists of a three-inch cube cut twice in each direction, thus forming twenty-seven cubes, each of which is of the same dimensions as the cubes in Gift III. Three of the cubes are divided diagonally into halves, and three into quarters. These divisions with the twenty-one whole cubes produce thirty-nine pieces. It will thus be seen that this gift is a development of Gift III., and introduces to the children not only a greater number of pieces, but fresh shapes formed by the slanting line; thus we have the sloping surface, the acute angle, etc. The first practice with Gift V. is like that with the preceding ones. The new cube should be compared with the former ones. The children will readily notice that it is much larger and that it is divided in a different way. The examination of the new features will be a source of great pleasure to

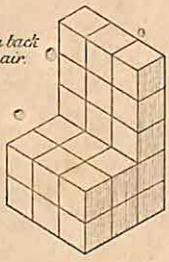


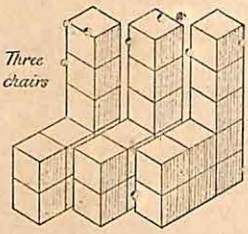
them, and the teacher will have no difficulty in drawing their attention to the half and quarter cubes, the slanting line, and the acute angles. When the children commence building they will readily discover that, in addition to the various forms with which they are familiar, owing to Gift III., there are numerous additional forms which they can now make, and churches and houses with roofs, bridges, arches, will soon form subjects for conversation with the teacher. (Plate XI.)

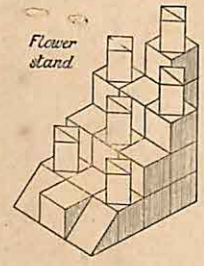
Forms of Knowledge.—These are similar to those made with the Third and Fourth Gifts, but we now get the further division into thirds, ninths, etc., which give still greater facilities for teaching *number;* so that, in addition to repeating the number lessons given with the other gifts, the teacher is able to make considerable advance in this subject, and with more advanced pupils fractions can be introduced. Many geometrical forms may be made, and the children thus become familiar with the following terms:—Squares, triangles, rhombs, square and triangular prisms, oblique lines, etc. (Plates XIV. and XV.)

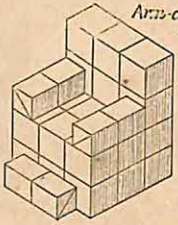
Forms of Beauty.—These are both numerous and elaborate. In addition to the square formations (Plate XII.) we have now those worked on triangular forms. (Plate XIII.)

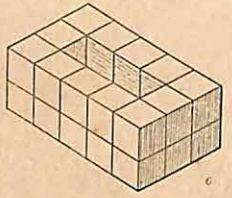

Flower stand.

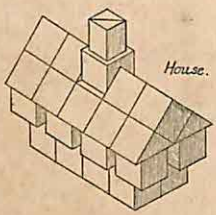

High back chair.

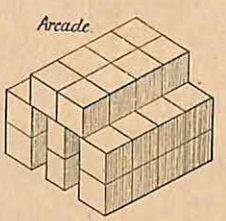

Three chairs

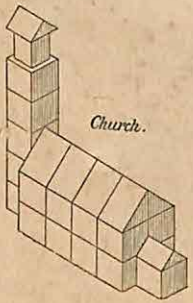

Flower stand

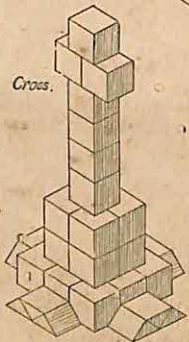

Arm-chair and stool.




House.


Arcade.


Church.


Cross.

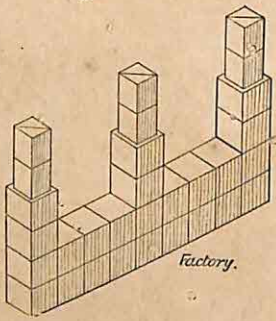
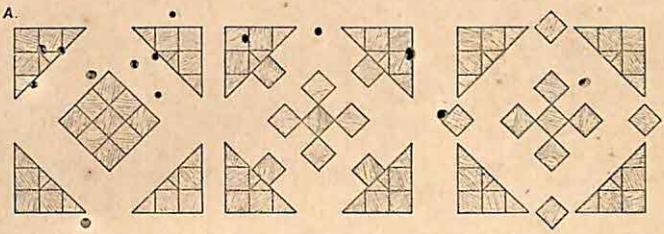
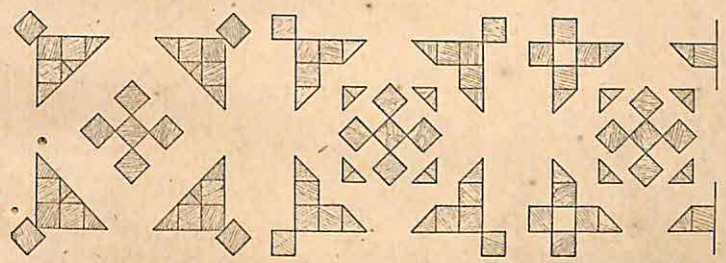

Factory.

Plate XI

A.





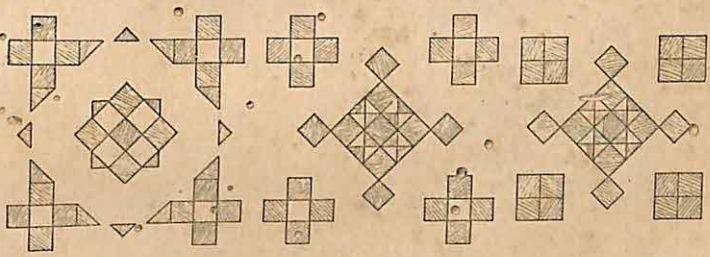


Plate XII.

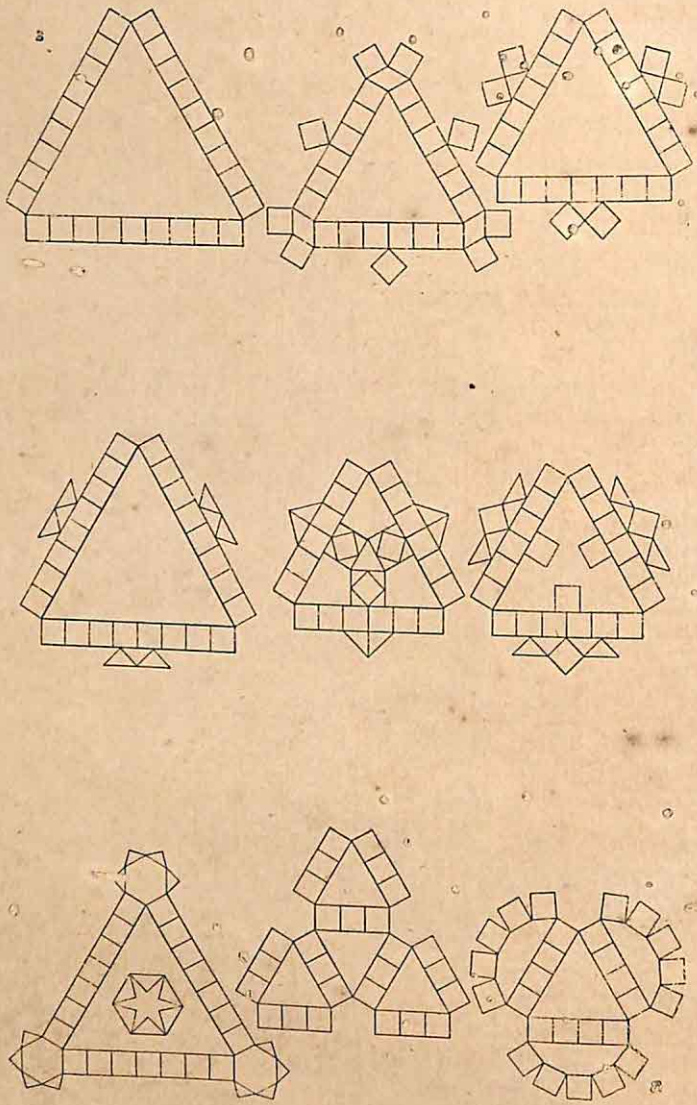
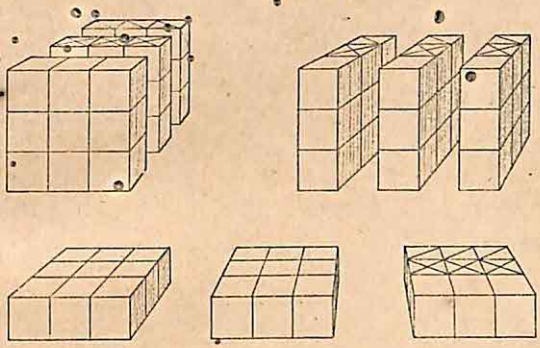
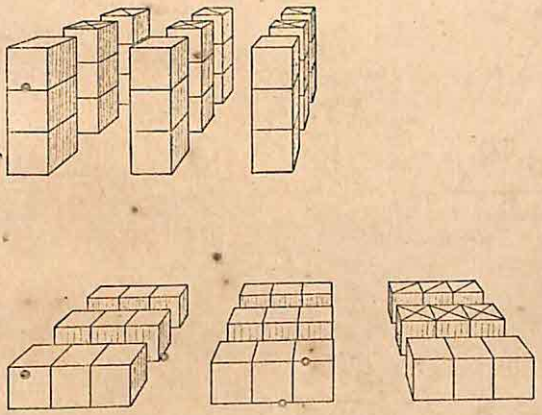


Plate XIII

A. *Into thirds.*



B. *Into ninths*



C. *Into twenty-sevenths.*

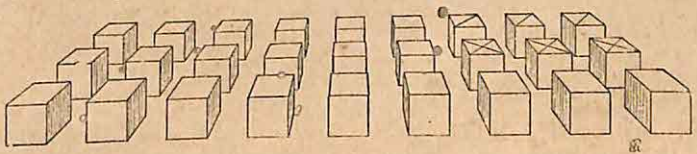
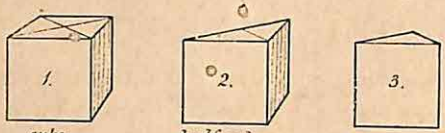


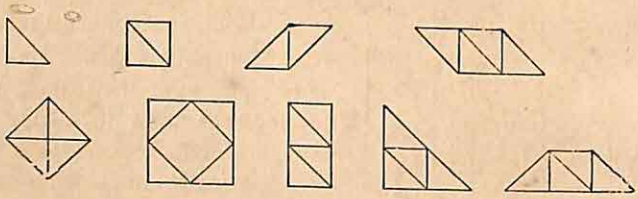
Plate XIV.

A. *Group the parts.*

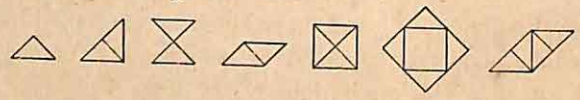


cube. *half-cube.* *quarter-cube.*

B. *Exercise with half-cube.*



C. *Exercise with quarter-cube.*



D. *Exercise with cube – a repetition of Gift III.*

E. *Combination of parts.*

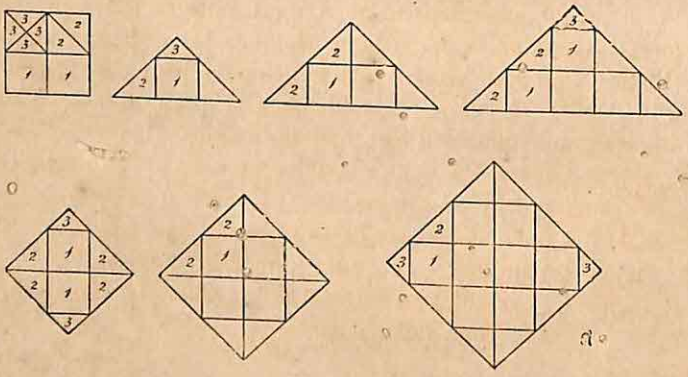
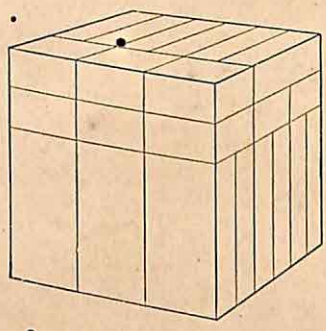


Plate XV.

GIFT VI.

THIS consists of a three-inch cube divided into twenty-seven oblongs. Three of these are cut lengthwise so as to form six four-sided prisms or pillars, and six are cut in halves across so as to form twelve half-bricks or square slabs. In this manner we get thirty-six pieces.



As the Fifth Gift was a development from the Third, so is the Sixth a development from the Fourth, the new forms being obtained by bisecting the original bricks of the Fourth Gift. The children quickly see the relation between the two gifts, and they should be directed to compare the oblong pillar and square. The proportions of the three should be pointed out; the number and nature of the edges, angles, and surfaces should also be noticed.

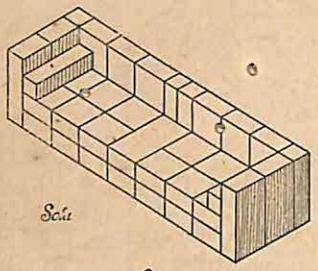
The Forms of Life which can be built with this gift are finer and more extensive than those constructed with the former ones, and offer greater facilities for elaborate work. (Plates XVI. and XVII.) By studying the plates the teacher will readily see how to build most of these forms. The following directions will be a help in building "the steps":—

Sides—Oblong + 2 squares + oblong + 2 squares + oblong—faced by 2 squares.

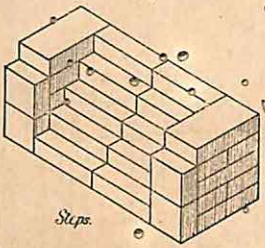
Back—4 oblongs and 1 pillar + 4 oblongs and 1 pillar.

Steps—(*a*) and (*b*). These are formed by the back.

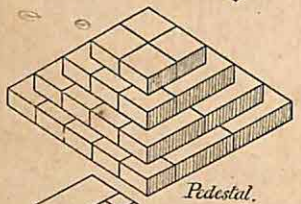
" —(*c*). 1 oblong on edge and 1 pillar + 1 oblong on edge and a pillar.



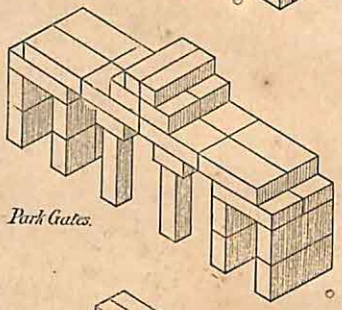
Sofa



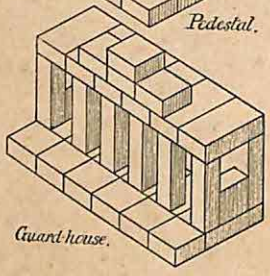
Steps.



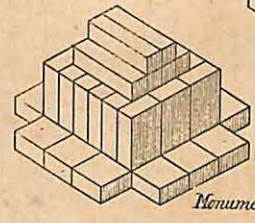
Pedestal.



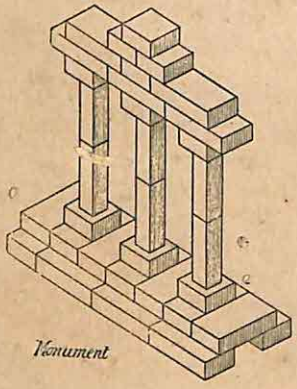
Park Gates.



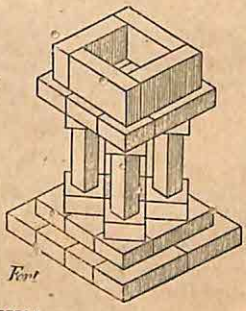
Guard-house.



Monument.

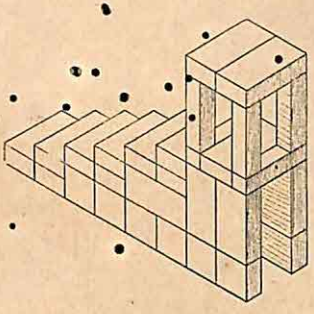


Monument

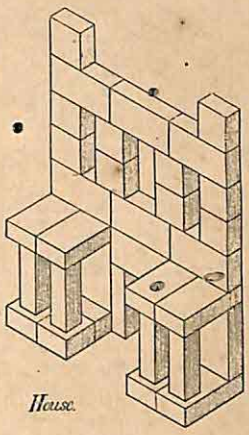


Font

Plate XVI.

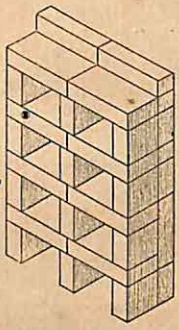


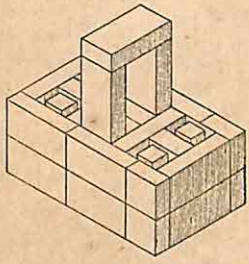
Block-out.



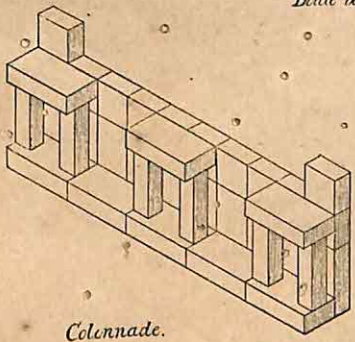
House.

Shelves.

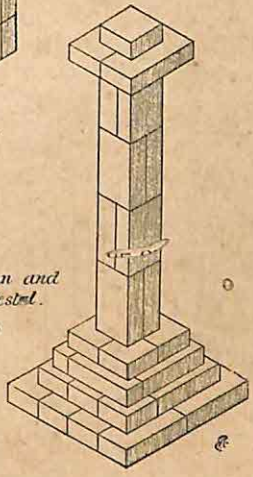




Bottle basket.



Colonnade.



Column and Pedestal.

Plate XVII.

Step—(*d*). 1 oblong on edge + 1 oblong on edge.
,, —(*e*). 1 pillar + 1 pillar.

The Forms of Beauty offer much less diversity than those of Gift V. (Plates XVIII. and XIX.) In laying these figures the teacher will notice that one or two of the pillars are not used unless placed in an upright position in the centre.

Forms of Knowledge.—Number can be taught as with the preceding gift (Plate XX.), and many geometrical forms can be made.

All the rules given in connection with the Third and Fourth Gifts apply equally to the two latter ones. No child under five years of age should use Gifts V. and VI.; in fact, many of the exercises cannot be performed with children under seven years of age, but should find a place in the lower standards of the senior departments.

GIFT VII.

Tablets.—The former gifts, though possessing in their separate forms different and essential characteristics, agreed in presenting solid bodies to the child, enabling him to represent real objects; *e.g.*, sofa, chair, table, house, etc.

The time has now arrived when the child should be led to grasp the idea of the picture or plane representation as distinct from the solid form of the object. For this purpose the tablets (Gift VII.) are introduced.

There are square and triangular tablets, the latter consisting of four sets, viz., right-angled isosceles, equilateral, right-angled scalene, and obtuse-angled triangles.

The tablets are made of thin wood, and each side should be of a different colour, thus forming a suitable contrast to each other, as red and green, blue and orange, black and white, etc.

By this means the sense of colour is greatly developed in the child.

1. **The Square Tablet** should be first used. To show that these tablets represent the surfaces of the cube it would be advisable to have a cube so constructed that its faces could be easily removed in front of the class.

The cube from Gift III. could also be used, the teacher covering its faces with the tablets, and after the class has recognised that with these additions we have still the cube, the tablets should be removed. At first only one tablet should be given to each child, who should, by examining it, discover its relation to the cube. He will soon recognise that it is of the same shape and size as the face of the cube, that it has four edges, four corners, and four right angles.

The term "right angle" will be new to the child, and it will be necessary for the teacher to explain it. Calling attention to the edges meeting at the corners, the children should be led to notice that a space is thus enclosed between the horizontal and perpendicular sides. The walls and floor of the room, the edges of the blackboard, slate, etc., would serve for further illustrations.

The teacher should get the children to move the tablet in different positions, and point out that in each case the one side always stands in a perpendicular position to the other or horizontal side: the angle thus formed is called a "right angle." "How many right angles has your tablet?" "How many right angles has this slate, book?" etc.

The children will probably have noticed that the opposite sides of the tablet have the same direction. If the teacher place several tablets together the children will readily see that the opposite edges will never meet, but always keep the same distance apart. In this way the idea of parallel lines can be demonstrated. The child having become thoroughly acquainted

A.

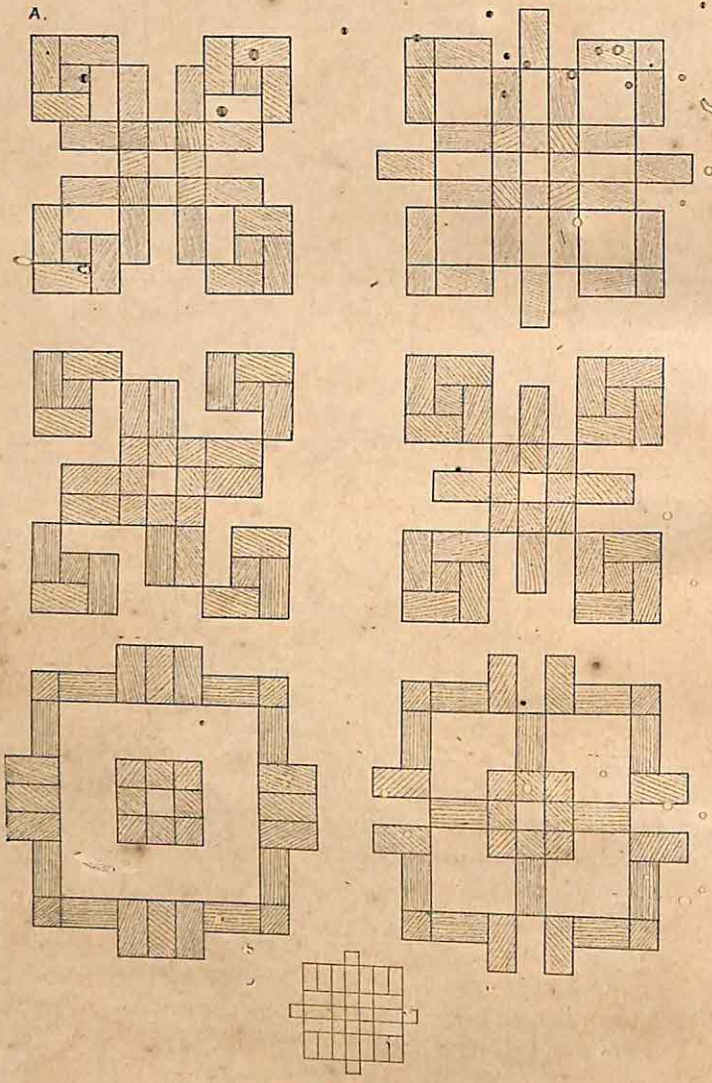


Plate XVIII.

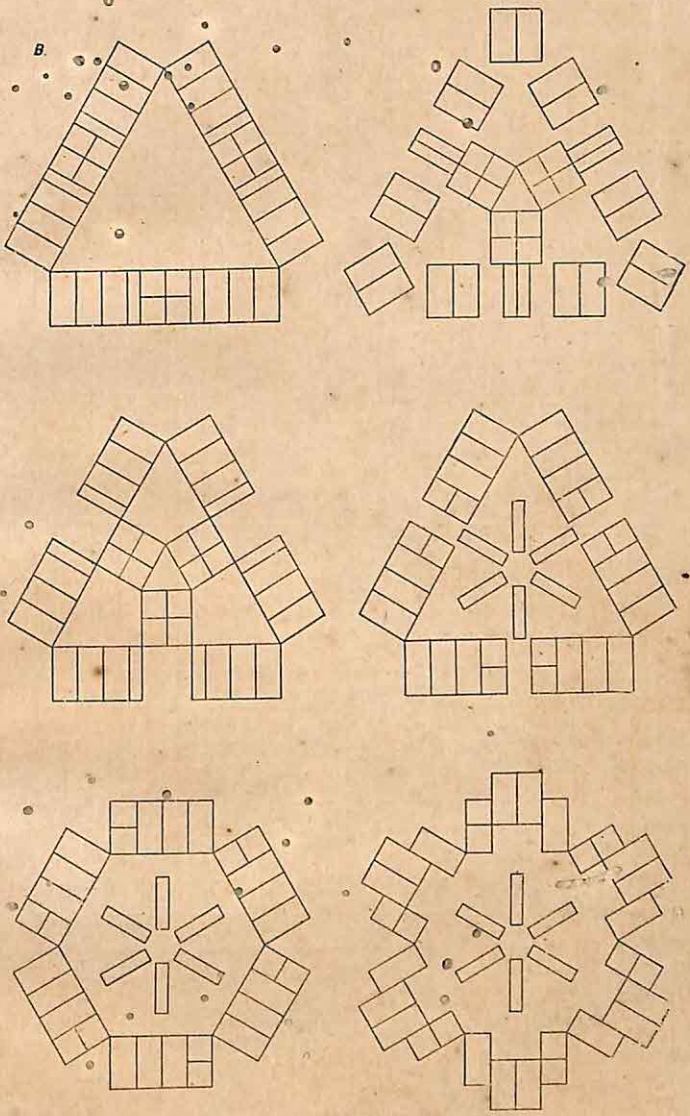
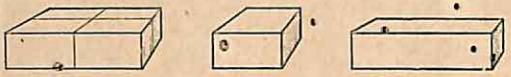


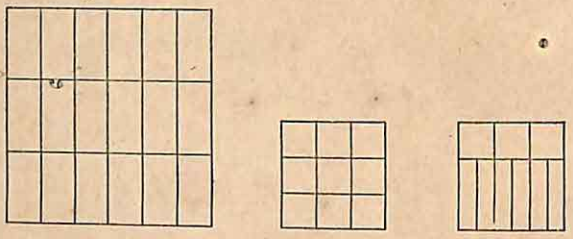
Plate XIX.

A *Group different parts.*

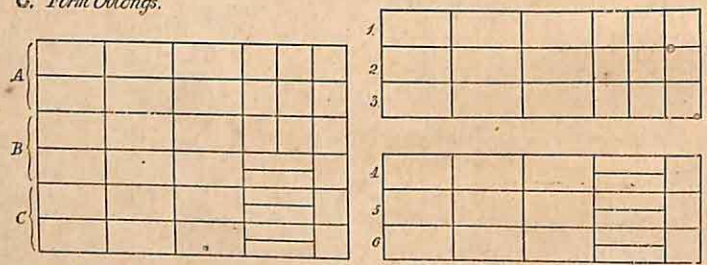


brick. *square.* *pillar.*

B. *Form Squares.*



C. *Form Oblongs.*



Also 3 oblongs as A.B.C. *6 oblongs as 1.2.3.4.5.6.*

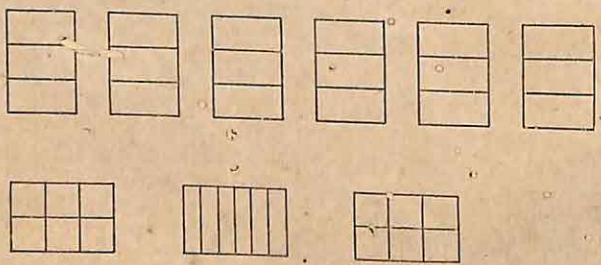
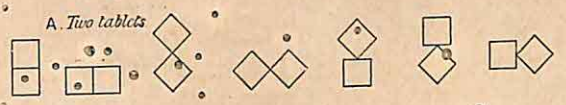
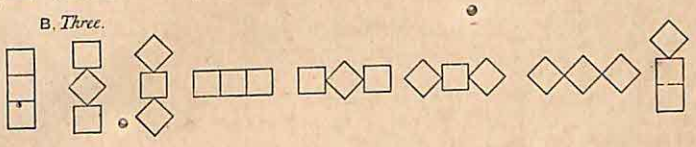
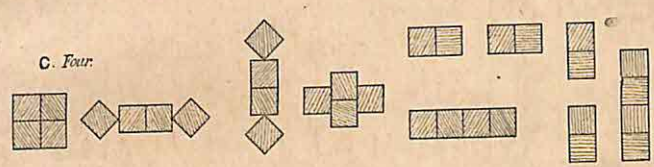
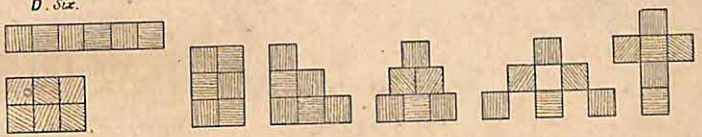


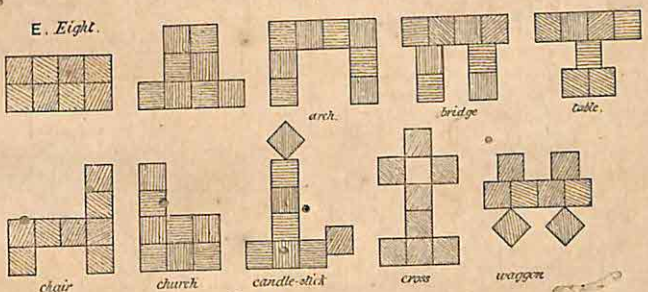
Plate XX.


A. Two tablets


B. Three.


C. Four.


D. Six.


E. Eight.
arch.
bridge
table.
chair
church
candle-stick
cross
waggon

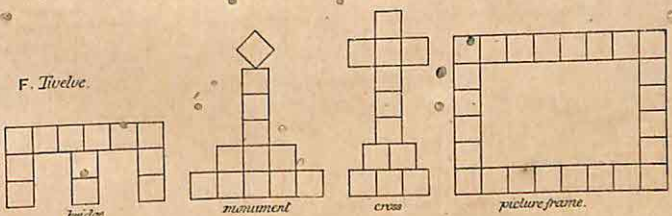

F. Twelve.
bridge
monument
cross
picture-frame.

Plate XXI.

with his tablet is allowed to place it in all the different positions he can, and then a second tablet is given to him. After comparing the two, he places them in different positions. Names should be given to these forms when possible; *e.g.*, place the two tablets side by side and an oblong is formed. (Plate XXI.) Lay one tablet corner-wise against the middle of the top of the other, and a flower in a pot is produced. Reverse the position of these and a pendant or medal is illustrated. Another tablet should be given when all the forms have been made with two.

With four tablets a greater variety of forms can be made, and with six and eight tablets nearly all the forms of the Third Gift may be made, though, of course, they will only be pictures of the said forms. The number of tablets should be increased at the discretion of the teacher.

Forms of life, knowledge, and beauty may again be made with this gift. The number of the forms of life is very limited. The forms of beauty are similar to those made with Gift III.; but here we have only surfaces, so that the star forms look better than when one cube high. (Plate XXII.) Forms of knowledge consist of squares and oblongs of different sizes. (Plate XXII.)

As the teacher talked with the children about the forms made with Gifts III. and IV., she should now lead them to converse about the forms made with the tablets, and tell them some interesting stories about these forms.

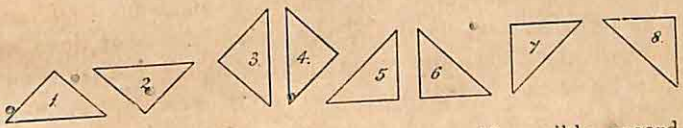
The following are some of the forms that can be made. (See Plate XXI., D E F.):—

2. Right-Angled Isosceles Triangles. (Plates XXIII. and XXIV.)

When the children have become thoroughly acquainted with the square tablets the right-angled isosceles triangles are introduced. On joining two together the children will see that they form a square the same size as the square tablets they

have already had, but they will see a new line in this square, a slanting line running from the right top corner to the bottom left corner. This line is called a *diagonal*. The children will see that this line divides the square into two parts; if they put them on one another they will see that both these parts are the same size; therefore each part is a half-square. The half-square should now be compared with the whole square. The whole square has four edges, four corners, and four right angles. The half-square has only three edges, three corners, and three angles; because it has three angles it is called a *triangle*, which means three angles. The edges and angles of the square to be compared with the edges and angles of the triangle. The edges of the square are all the same length, and the angles are all the same size—all right angles.

Two of the edges of the triangle are the same length, and one is longer, and it has one right angle and two smaller ones. If the corner that forms the right angle be compared with those which form these smaller angles it will be found that the latter are much sharper. These angles are called sharp or *acute angles*. The children can now describe this triangle, the half of the square, and then place it in different positions, thus:

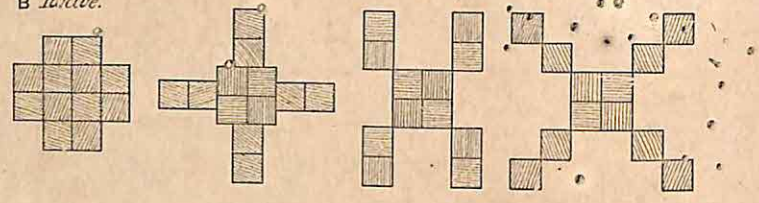


Names should be found for these forms, if possible, according to their resemblance to some familiar object; *e.g.* (1) a mountain, (2) a funnel.

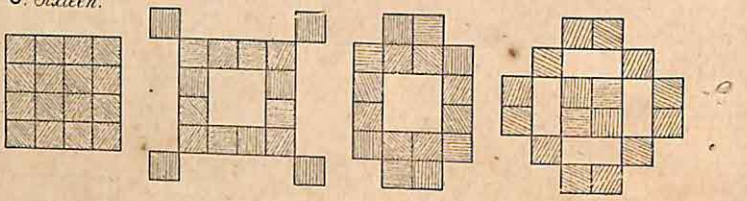
The child should next place two tablets in different positions. The number of tablets to be increased gradually. Each form made should, if possible, receive a name, and then should follow some conversation or story relating to it.

A. *For examples with eight tablets see Gift III.*

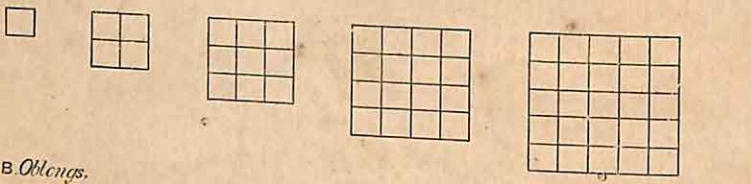
B *Twelve.*



C. *Sixteen.*



A. *Squares.*



B. *Oblongs.*

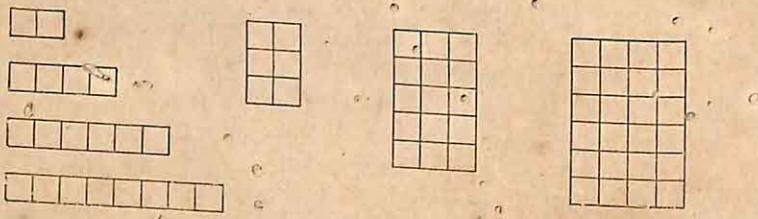
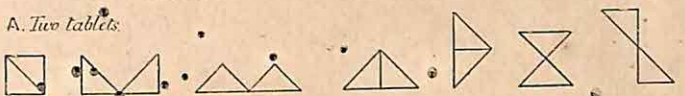
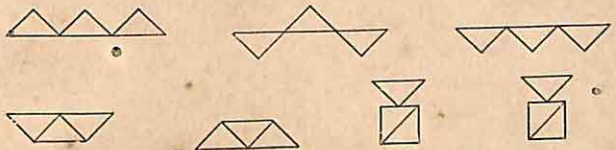


Plate XXII.

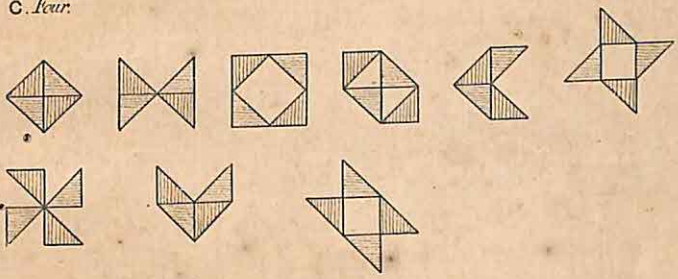
A. *Two tablets.*



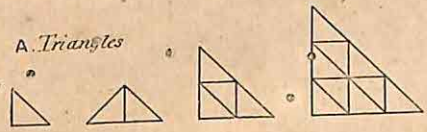
B. *Three.*



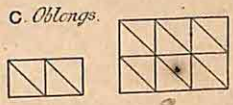
C. *Four.*



A. *Triangles*



C. *Oblongs.*



B. *Squares*

D. *Various forms.*

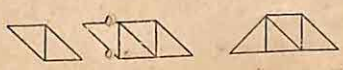
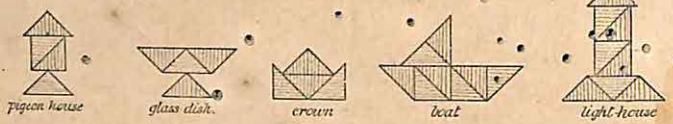
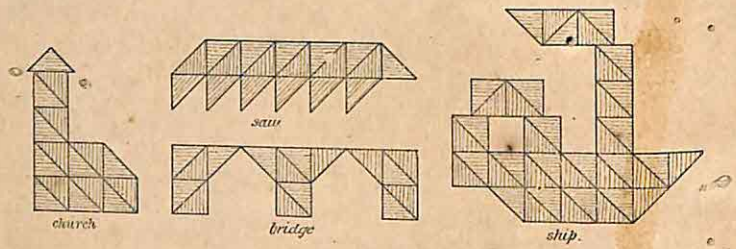
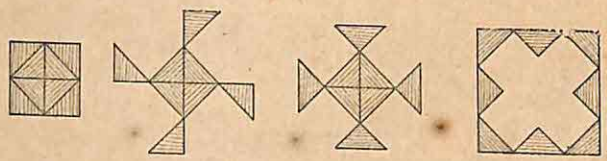
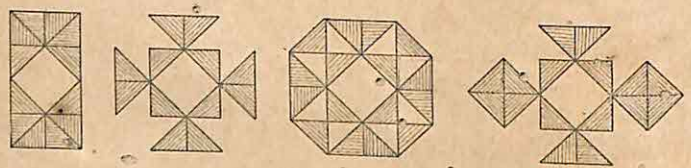


Plate XXIII.


pigeon house
glass dish.
crown
boat
light-house


church
saw
bridge
ship.





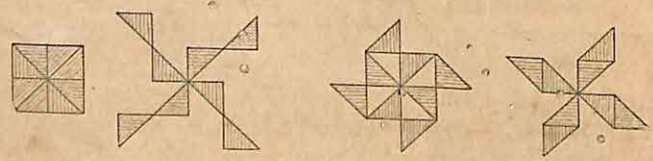


Plate XXIV.

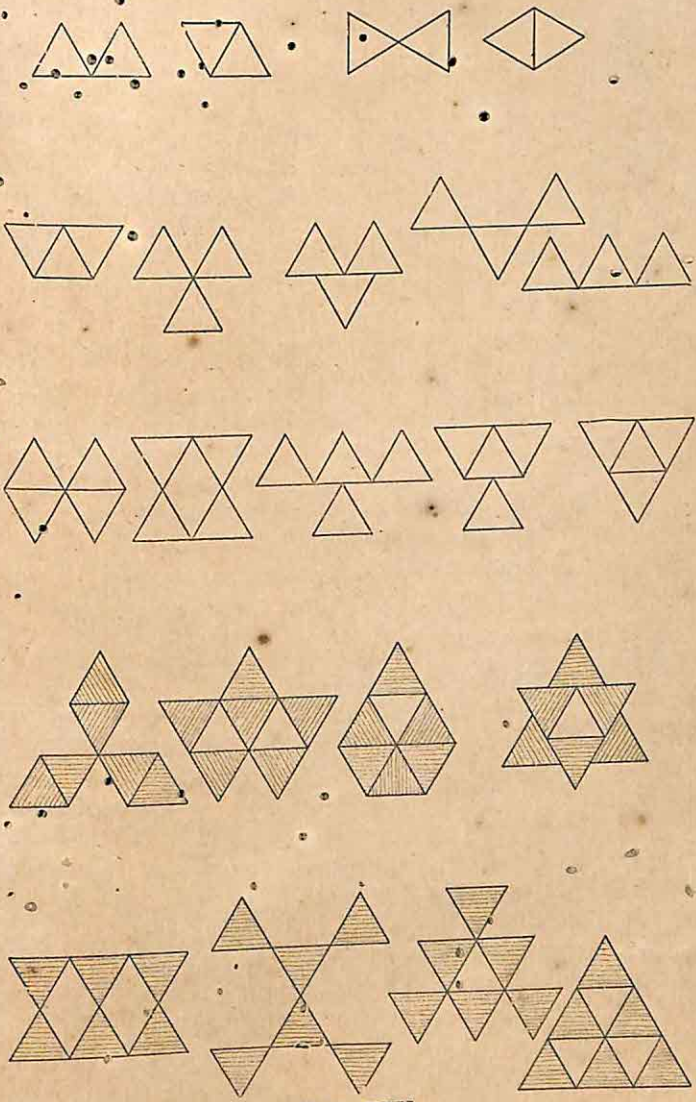


Plate XXV.

Tablets for Laying Figures.

3. The Equilateral Triangle. (Plates XXV. and XXVI.) This should be compared with the right-angled triangle. The children will see that although a triangle it is different to the one they have used. The right-angled triangle has two edges of the same length and one longer. This new triangle has all its edges of the same length. The angles should then be compared. The children already know that the isosceles triangle has one right and two acute angles; they will now examine this triangle and discover that it has three angles all alike, all acute. The children should be led to notice that on whichever side the tablet is placed it always looks the same. Does the isosceles triangle? No; it has only one base line. The children to be told that because this triangle has three equal sides it is called an "equilateral" triangle Exercises with these tablets should follow as with the right-angled triangle—first with one, then with two, three, etc., etc.

4. The Right-Angled Scalene Triangle. (Plates XXVII. and XXVIII.)

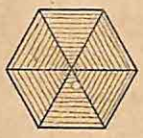
The third kind of triangle is the right-angled scalene triangle, or the right-angled unequal-sided triangle. This triangle is really developed from the oblong. When shown to the children they will see that it is a triangle, though different to the two they have already seen. It is like the first because it has a right angle and two acute angles, but it is unlike because all its sides are unequal. They should join two together, when they will discover the oblong divided into halves by the slanting line, just as the square was divided to get the right-angled isosceles triangles. The whole and the half should be compared. Exercises with these tablets should follow as with others.

5. Obtuse-Angled Triangle. (Plate XXIX.)

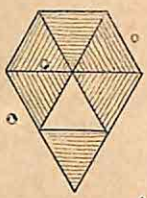
The fourth set of triangles is the obtuse-angled triangle. This should be examined and compared with former ones. The children will discover that one of its angles is different to any they have seen in the other triangles: it is much larger, it is called an obtuse or blunt angle. The other two angles are acute. Two edges are of the same length, the other, the base line, is longer. All these facts will soon be discovered by the children. They should then be allowed to use the tablets for laying the different forms of life, knowledge, and beauty. Although many forms of life can be constructed with these tablets, those made with the preceding ones are much more exact. The forms of beauty are numerous and varied.

Teachers will find it advisable to use the different tablets in combination, and as the tablets are all made on the same scale they are well adapted for this purpose. Owing to the different colours of the tablets, the colour on the one side forming a contrast with the one on the other, the forms of beauty present pleasing arrangements, and at the same time a tasteful combination of colours is acquired.

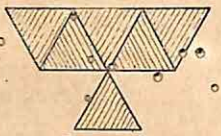
This gift is particularly valuable in teaching the children geometrical forms. The child becomes quite familiar with the square, the different triangles, the rhombus, the rhomboid, the trapezoid, and the hexagon. He learns to distinguish the different angles, and such lines as vertical, horizontal, oblique, parallel, and the diagonal. These tablets might with great advantage be used in the senior department. Teachers would find that the geometrical forms would be more easily and thoroughly learnt by means of them.



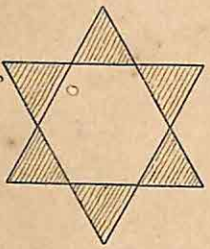
Six tablets.

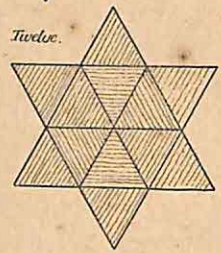


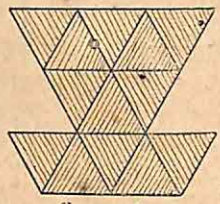
Twelve.



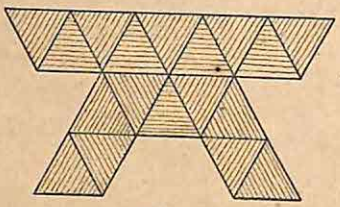
glass dish.



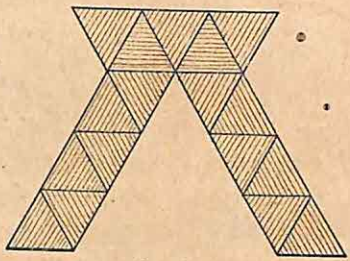




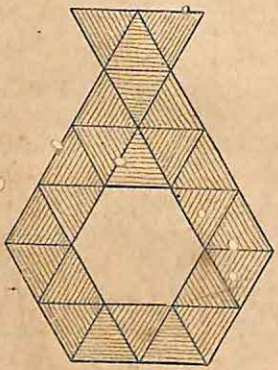
flower-pot.



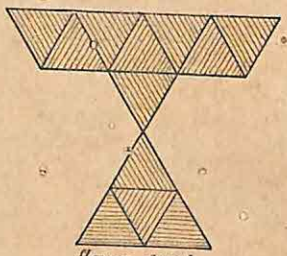
stool.



ladder



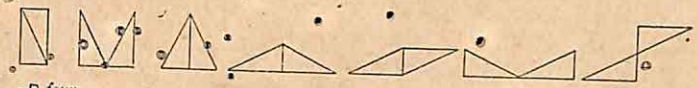
decanter



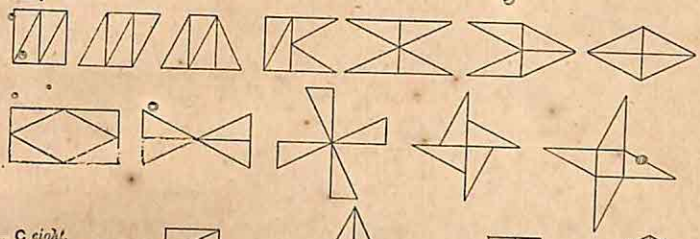
flower-stand

Plate XXVI.

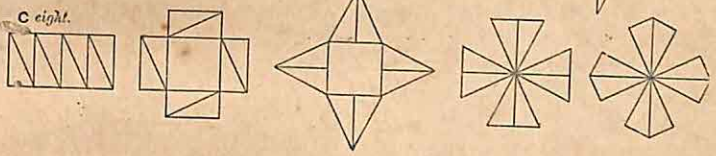
A *two tablets.*

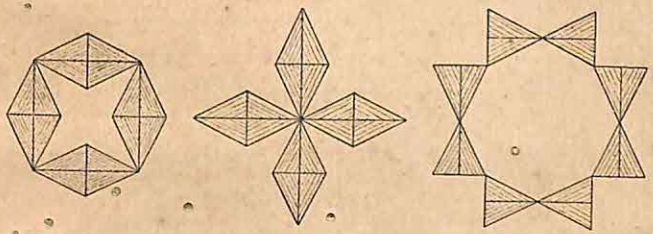


B *four.*



C *eight.*





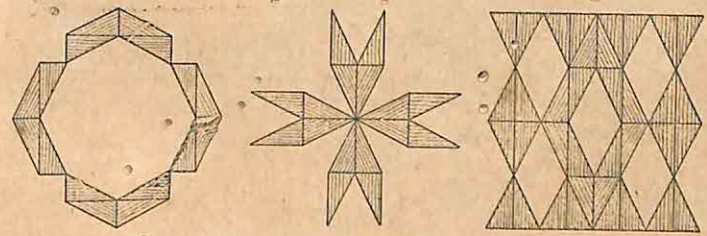
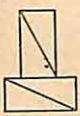
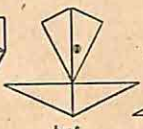


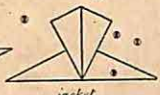
Plate XXVII.

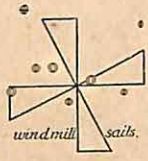

monument.

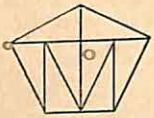

coffee-mill.

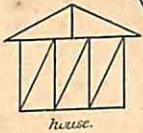

funnel.

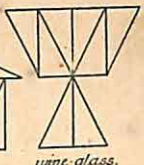

boat

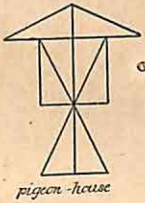

jacket

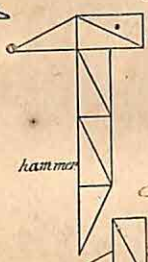

windmill. sails.


dish and cover.


house.


wine-glass.


pigeon-house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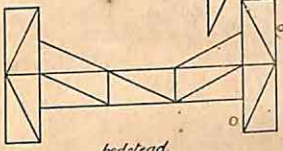
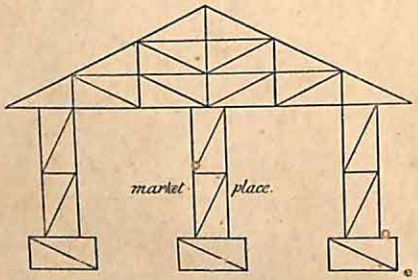
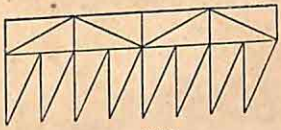
bridge


bedstead.


market place.


saw.

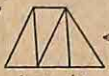

isosceles triangle.

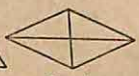
oblong.


rhomboid.


square.


rhombus.


trapezoid


rhombus.

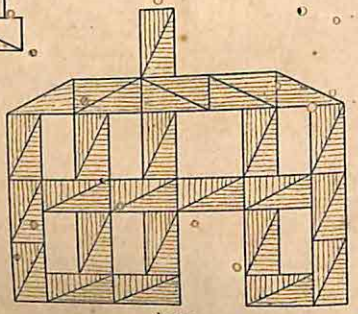

house.

Plate XXVIII.

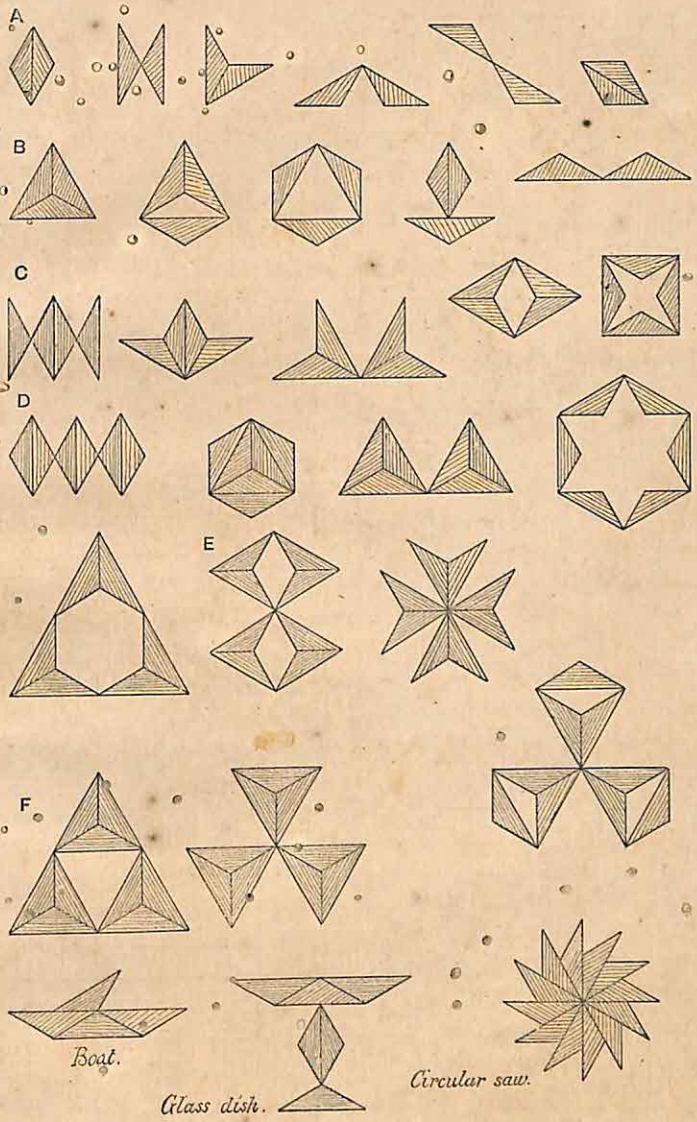


Plate XXIX.

GIFT VIII.

Sticks, or Staffs for laying figures.—This gift consists of sticks of different lengths, varying from one to five inches. They are hard, white, smooth, round, and about the thickness of a match. To make the children careful in handling them, the teacher should point out that the sticks are brittle. Sometimes coloured sticks are used to give greater variety to the forms made with this gift. These sticks correspond to the detached edges of the cubes or tablets. This can be shown by cutting a tablet into strips. In this gift, therefore, we make a still further advance from representing real objects by solid forms.

In the preceding gift we represented real objects by their *surfaces*, now we can only represent them by their *outlines*. This leads us to the drawing of the objects, for the children really seem to draw the figures with these embodied lines. The children first have one stick each, which they should describe, and then place in different positions, using such terms as "upright" or "perpendicular," "horizontal," "slanting" or "oblique," and pointing to something in the room occupying a similar position. (Plate XXX., A.)

With the addition of another stick the child's opportunities are greatly increased. The various angles are produced and named, parallels are made, and numbers of familiar objects are described. (Plate XXX., B.) Of course, during the whole of these operations the teacher must encourage the children to converse about the objects named, and she must impart any information suggested by these forms. Besides describing the forms by word and stick, the children should make drawings of them on their own ruled slates. Gradually the number of sticks should be increased, and in this way the various forms of life, knowledge, and beauty would be made.

Many letters and simple words can be made with the sticks, especially if some of the sticks are partially broken (Gift IX. will, however, give us better materials for curved forms). The first steps in reading and writing can thus be easily and pleasantly taught. (Plate XXXI.)

The forms of knowledge not only consist of the various geometrical forms already noticed in the preceding gifts, but form various groupings for the teaching of number. It will be found that this gift is exceedingly valuable for teaching this subject. To enable the child to commence the study of number special exercises with the materials of this gift should be given. The sticks can be grouped or packed into so small a space that a large number may be given without causing the child any great inconvenience. For the purpose of teaching number, the children should each have a bundle of ten sticks given to them. After opening the bundle, they can begin to count forwards and backwards, and then to add, subtract, multiply, and divide as far as 10. In teaching addition of 1, the children to take 1 stick from the bundle, place it on the table, and then place another one near it. "How many sticks?" To repeat "1 stick and 1 stick make 2 sticks." Next place 2 sticks and another near them. Count them. Repeat, "2 sticks and 1 stick are 3 sticks." Then "3 sticks and 1 stick," "4 sticks and 1 stick," and so on, till "9 sticks and 1 stick" have been added. Children should repeat this table many times, first counting with the sticks, and afterwards without the sticks. Simple questions should then be given on what they have learnt; *e.g.*, "If Tommy had 6 marbles and his brother gave him another, how many would he have?"

The addition of 2, 3, 4, and 5 to be treated in the same way.

The subtraction should always be based on the addition, thus: The children already know that "1 stick and 1 stick

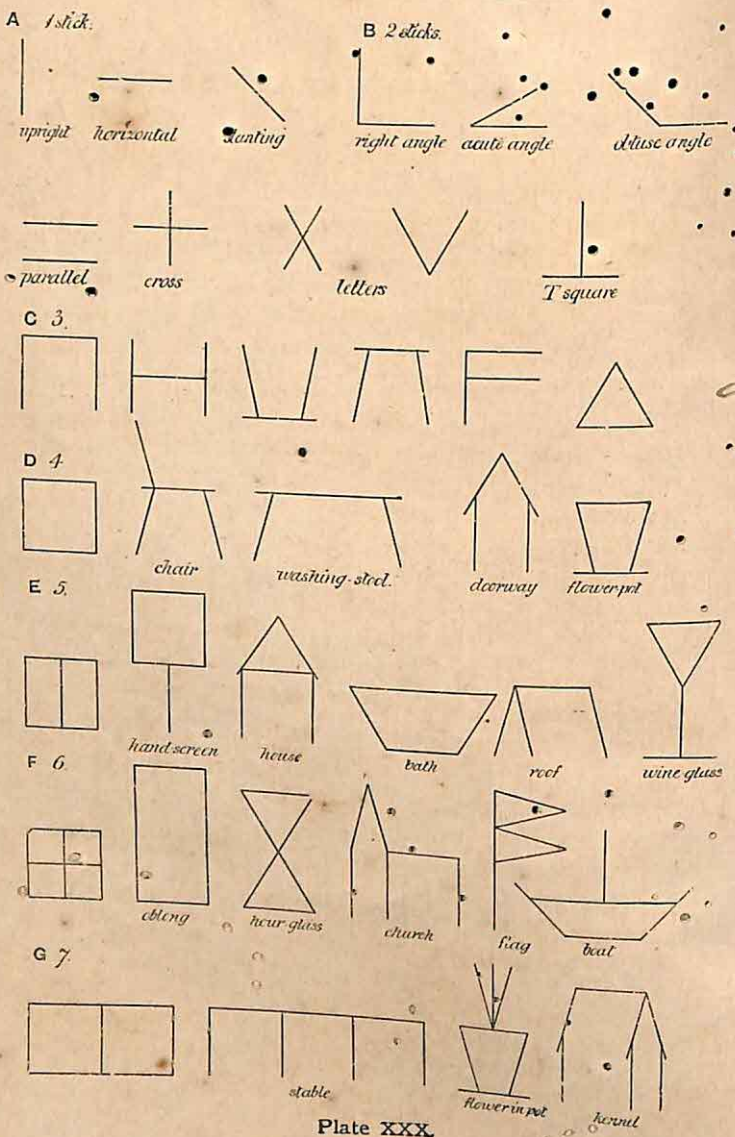
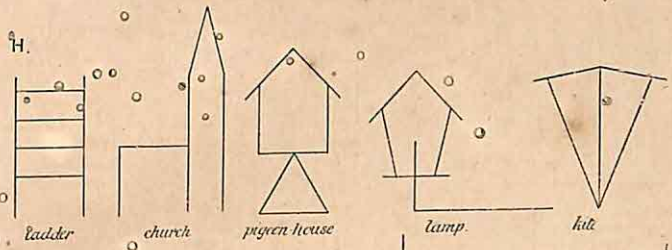
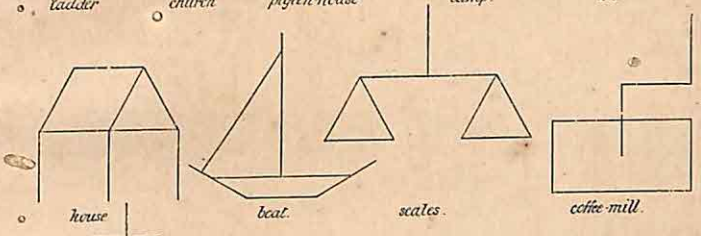

A 1 stick.
upright
horizontal
slanting
B 2 sticks.
right angle
acute angle
obtuse angle
parallel
cross
letters
T square
C 3.
D 4.
chair
washing-stool
doorway
flower-pot
E 5.
hand-screen
house
bath
roof
wine glass
F 6.
oblong
hour-glass
church
flag
boat
G 7.
stable
flower-in-pot
kennel

Plate XXX.

H.





J.

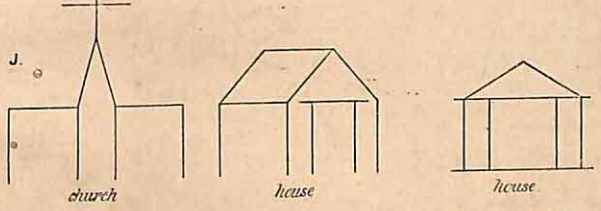


Plate XXXI.

make 2 sticks," now they have to learn "1 stick from 2 sticks leaves 1 stick," then "2 sticks and 1 stick are 3 sticks," "1 stick from 3 sticks leaves 2 sticks," "3 sticks and 1 stick are 4 sticks," "1 stick from 4 sticks leaves 3 sticks," up to "9 sticks and 1 stick are 10 sticks," "1 stick from 10 sticks leaves 9 sticks." This table should be repeated as with the addition. Simple questions should then be given.

The multiplication should also be based on the addition, thus: In teaching the multiplication of 2, children should place 2 sticks on the table. Count them. "How many twos?" Repeat, "One two is 2." Then place 2 more sticks by the others. Count them. "2 and 2 are 4." "How many twos." Repeat, "2 twos are 4." A third two placed by the others. Add them—"2+2+2=6." "How many twos?" Repeat, "3 twos are 6." And so on up to "5 twos are 10."

The table should be repeated as before, then exercises given.

Division is the reverse of multiplication. Children, instead of saying "2 twos are 4," repeat "there are 2 twos in 4," "there are 3 twos in 6," etc., etc.

It will be found a good groundwork if the children can thus use the numbers as far as 10. When the children have become thoroughly acquainted with 10, they may have 10 packets of tens, and treat these as they have already treated the ten units, learning to count them, first "1 ten," "2 tens," "3 tens," etc., and afterwards "ten," "twenty," "thirty," etc. They may also add, substract, multiply, and divide with them as they did with the units.

The combination of units and tens may now be taught. The children should have two packets of tens given to them. One of these should be kept whole and the other opened, and the children, adding the units one by one to it, saying, "1 ten and 1," "1 ten and 2" "1 ten and 3," "1 ten and 4," etc.,

as far as "1 ten and 10;" then taking one away each time, saying, "1 ten and 10," "1 ten and 9," "1 ten and 8," "1 ten and 7," etc. Subsequently the children will be told that we do not say "1 ten and 1" of anything, or "1 ten and 2," etc., but we have proper names for these numbers, viz., "eleven," twelve," thirteen," etc.

The other combinations up to 100 would form subject matter for several lessons.

For teaching numerals the sticks are also useful, as the proper value of the numeral can be taught. The blackboard must, of course, be used for showing the figures.

From what has already been stated, it may be seen that Gift VIII. is a most important gift. By means of it, children may be taught form, number, reading, and drawing, besides the general information that can be imparted throughout the lessons. It may be used with children of ages varying from three to six years. Children of three years can be interested in placing one, two, three, and even four sticks, and those older can learn very much while making the various forms of life, knowledge, and beauty.

GIFT IX.

Rings for laying figures.—This gift consists of whole and half-rings for laying curved figures.

A box generally contains twenty-four whole and forty-eight half-rings of two or three different sizes.

This gift is immediately connected with the previous one, for whereas the sticks represent the straight line, here Fröbel gives a representation of curved lines. The curved line has been before represented by partially breaking the stick, but that was only an imperfect representation. The rings supply a perfect curved line. The teacher should show the cylinder

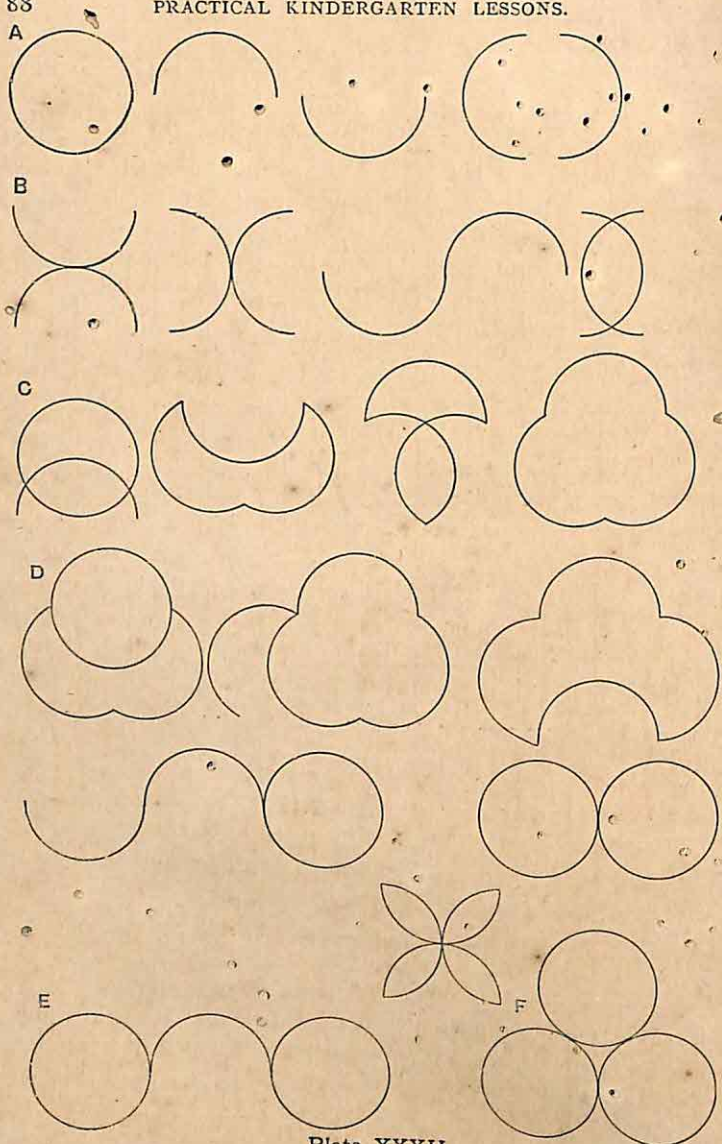


Plate XXXII.

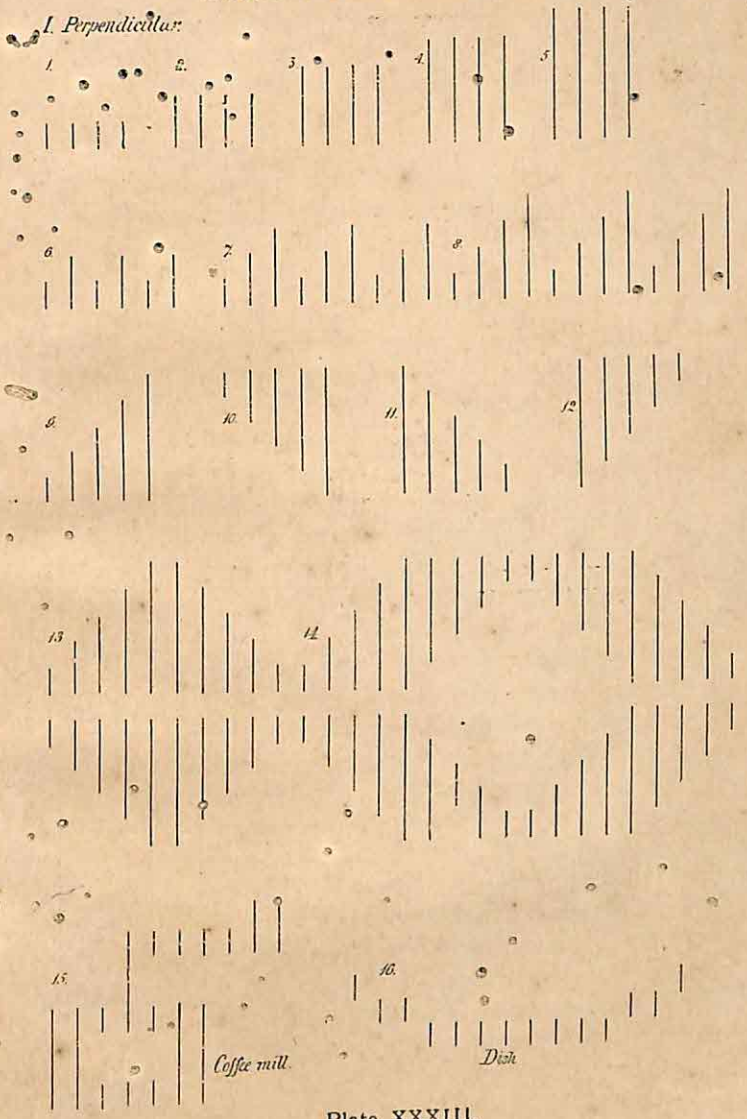


Plate XXXIII.

to the children, and lead them to discover that as the sticks (Gift VIII.) were obtained from the edges of the cube, so these rings are obtained from the edge of the cylinder. This gift must be introduced as the previous ones have been. One large half-ring to be given; first this should be compared with the stick, its two ends noticed, and then other things named that are similar to the half-ring; *e.g.*, an arch, new moon, dish, etc.

Two half-rings should then be given, compared and placed in different positions, finally forming a circle. Formerly, when the child combined cubes, tablets, and sticks, corners and angles were formed; the absence of corners and angles in the circle to be pointed out. The two half-rings might then be changed for the whole ring. The child will find that he can make no change with the whole as he could with the two halves, unless it is rolled or twisted round. The easiest process with this gift is for the child to begin with the whole rings (the exercises with these being less difficult than with the half-rings), commencing with one ring, and proceeding to two, three, four, up to twenty-four. Then two, four, six, eight half-rings are given, up to forty-eight. Lastly, whole and half-rings are combined.

Forms of life, knowledge, and beauty (Plate XXXII.) may again be formed with this gift, but the forms of life are few in number, and not very striking representations of the objects, and the forms of knowledge are contained, as it were, in the forms of beauty. The children will be greatly interested in the forms of beauty produced by the curved lines. Under the direction of the teacher many really beautiful figures will be constructed, presenting such regularity and simplicity of form as to appeal to the children's innate love of order and symmetry. To obtain true representations of the required forms the children will have to be very neat and exact in their work.

GIFT X.

Drawing.—The material for this occupation consists of chequered slates and afterwards of chequered paper for drawing on. This plan of teaching drawing is one of Fröbel's own invention, and adapted by him to suit the age and capacity of the child. He gives the youngest children (three and four years) the chequered slate, the lines of which help them in drawing straight lines.

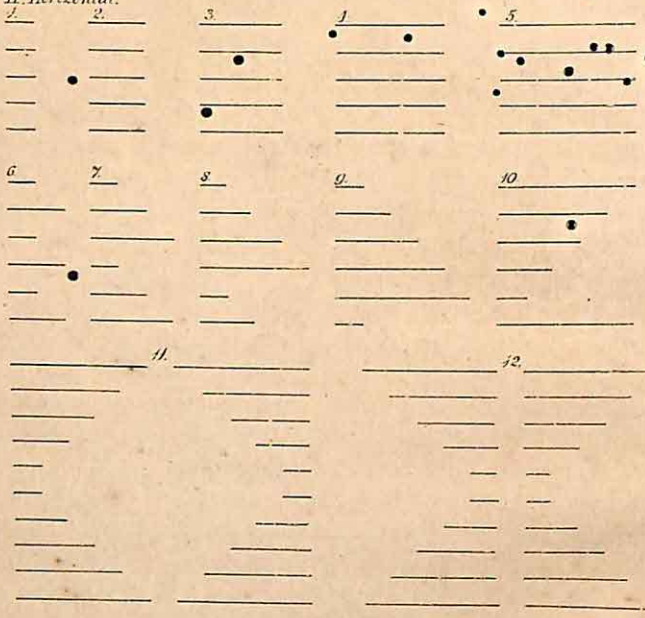
1. They are first taught to draw vertical lines one square long: these are examined and compared with anything they may remember as being in a similar position, thus: During the lesson the children may draw six posts, six trees, six little boys, six little girls, six soldiers, etc., etc., all these different upright things being represented by vertical lines. Proceeding in this way, it will be found that the drawing lesson is a source of great pleasure to the children; they try to make all their lines as straight as possible, so as to better represent the objects.

When the children are able to draw on one square very fairly they may proceed to lines of two squares, the same kind of conversation being maintained. The children then proceed to lines of three, four, and five squares. The youngest children will probably not be able to draw lines of more than two or three squares, but these can be varied by changing their position on the squares. Sets of lines of different lengths may then be combined in various forms. (Plate XXXIII.)

2. The horizontal line (Plate XXXIV.) follows, and in the same order; first, the different lengths being drawn, and afterwards the lengths combined.

3. The next step (Plate XXXIV.) is the combination of vertical and horizontal lines forming right angles at the

II. Horizontal.



III. Combination of Perpendicular and Horizontal.

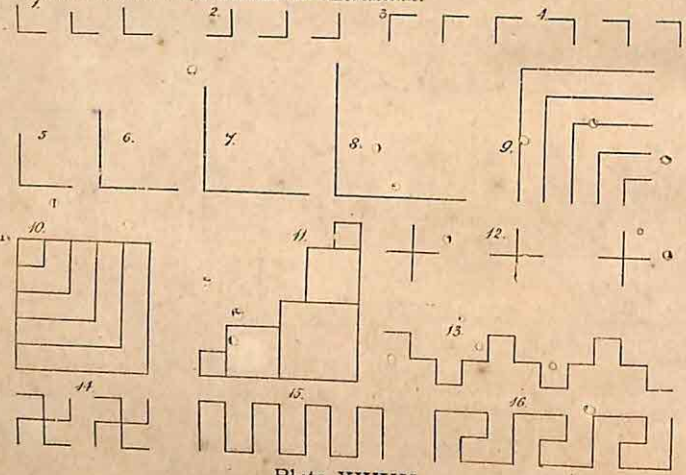


Plate XXXIV.

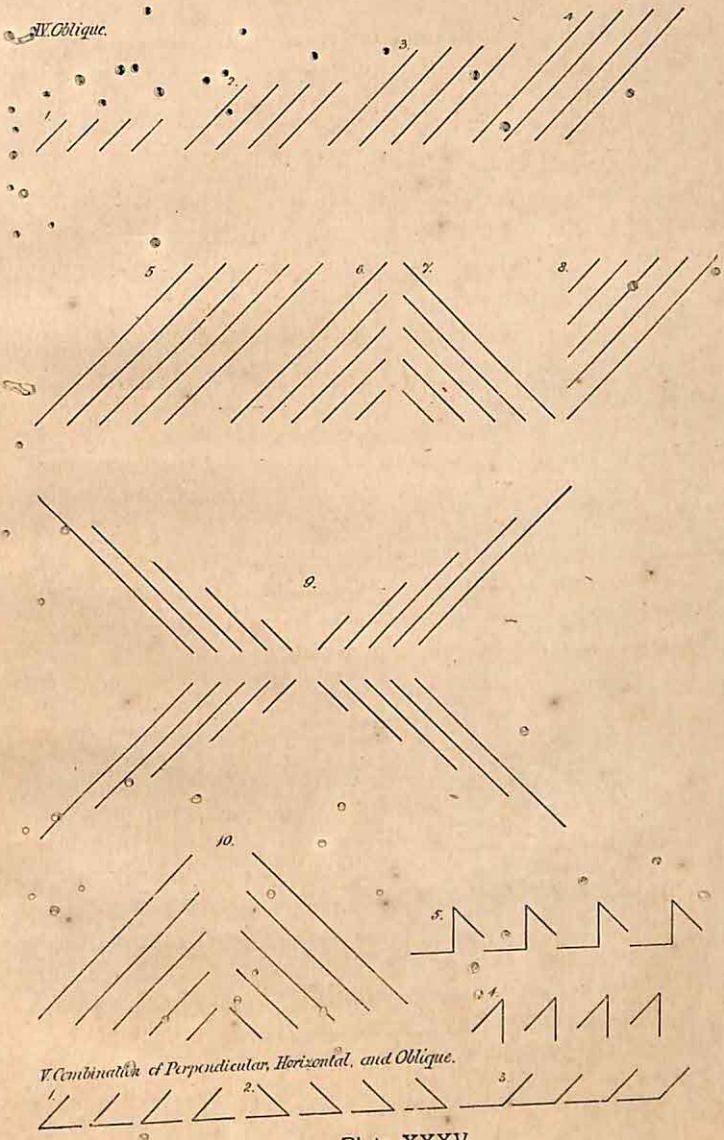

IV. Oblique.
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
V. Combination of Perpendicular, Horizontal, and Oblique.
1.
2.
3.

Plate XXXV.

point of contact; first, lines of equal and then of unequal lengths are drawn; *e.g.*, vertical line one square, horizontal line two squares, etc. These combinations will lead to the drawing of squares, ladders, steps, zigzags, crosses, etc.

4. (Plate XXXV.) When the children have had sufficient practice with the vertical and horizontal lines they may proceed to the oblique line, beginning with the diagonal of one square, and then of two squares, etc., and drawing the lines first inclining to the right and then to the left. In a similar way the diagonal of oblongs should be taught. These in combination will form trellisses and interlacing patterns.

The three kinds of straight lines may then be used in a variety of simple, ornamental designs.

The geometrical forms and the outlines of many common objects will suggest a pleasing variety of exercises for the children.

Lastly the curved line is introduced, the semicircle and circle affording sufficient practice, and enabling many other forms to be made. This, however, is generally too difficult for the children of the infants' school.

GIFT XI.

Perforating.—This gift is placed in the fourth group of gifts, viz., points. It represents the smallest part of the solid—the corner. The materials for this occupation consist of chequered paper, a perforating needle, and a soft pad of felt, which is placed under the paper to be perforated; subsequently plain paper and simple drawing copies are used for perforating.

In the first lesson the teacher should, as with the previous gifts, interest the children in the materials before them. She should be provided with a chequered board, which she should

use to show the children where to begin their work, and how to proceed. Great care must be taken to show the children how to hold their prickers; if they are not held perpendicularly the holes will not be good. It is necessary also to be careful about the size of the holes, which should be neither too large nor too small. The same course of instruction is followed as in drawing, the children first dealing with vertical lines, then with horizontal, and finally with oblique ones.

For the first exercise the children should prick in the corners of the squares the top and bottom of the verticals. Next they should prick the top, bottom, and middle of the verticals, thus making three pricks for each vertical of one square. After this exercise they can make two pricks between the first two, and even three. The increase in the number of pricks increases the difficulty, as the children must make them all on the vertical line, and all at equal distances apart. When the children have done a sufficient number of copies of vertical lines one square long, they may proceed to lines of two, three, four, and five squares. In every case there must be at least three pricks on each vertical of one square, one in each corner and one in the middle. As in drawing, these lines of different lengths may then be combined to make various forms. The horizontal line is next pricked, and in the same order. Then follows the oblique line, and finally the three lines are combined in various ways.

When the children can prick patterns nicely on the chequered paper, simple drawing copies are given them: these are placed over plain paper. The children then prick the outlines of the drawings, and when the copy is removed they see that they have the same traced on the plain paper underneath. This work may be nicely finished by *shading*. This is done by turning the paper over and making very many tiny

perforations very close together in certain parts. When the paper is turned on the right side again these parts will be raised, and make the pattern look very pretty. The pad used for shading should consist of several sheets of blotting paper, as a harder pad than the felt one is required for this part of the work. The finer the perforating needle the better the shading looks. As a great deal depends upon the effect these exercises have on the mental development of the child, the teacher must be very careful to select suitable copies. The designs should be taken principally from the animal and vegetable kingdoms. While the copies are being perforated, the children, under the careful supervision and aided by the appropriate conversation of the teacher, will learn much more about the subject represented by the pattern than if they were merely receiving a lesson with a picture in front of them.

By this occupation children acquire steadiness of eye and hand, accuracy and correct measurement, their inventive powers are called into play, and a refined taste is cultivated.

The patterns given for drawing may be used as patterns for perforating. Simple drawing books and cards, such as those published by Nelson and others, are well adapted for perforating and shading.

GIFT XII.

Material for Embroidering.—The material for this occupation is chequered paper (indeed the paper that has already been used for perforating may now be used for embroidering), needles, and coloured silk, cotton, or wool. The course of instruction is the same as for perforating. This occupation should not be introduced simultaneously with per-

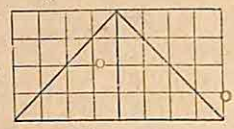
forating, but should follow when the children can perforate fairly well. After the exercises on chequered paper the children are allowed to embroider the flowers, fruits, animals, etc., previously perforated. The element of *colour* is here introduced. The children should first work only with silk, wool, or cotton of one colour, then two, and finally they should combine many colours. Great care should be taken in the choice and arrangement of these. Where natural objects are embroidered they should be worked in colours as true to nature as possible.

In this, as well as in perforating, much useful information can be imparted by simple conversations between teacher and children while they are at work; *e.g.*, they should first talk about the materials with which they work, and then the pattern which is being embroidered would form the subject for useful lessons. The very fact of the child making a copy of the object referred to in the lesson awakens his interest and gives him greater pleasure, not only in what he is doing, but in listening to his teacher. Whenever the child sees his work it will remind him of the interesting facts he learnt while executing it.

GIFT XIII.

Paper-cutting and Mounting.—The material for this occupation consists of one small square of paper (about four inches) to be cut, another large square (about eight inches) on which the pieces are mounted, two pieces of blotting-paper, gum and gum-brush, and scissors.

As in the previous occupations, the material for this one must be talked about. The children will then proceed to fold the small square into an eight-folded right-angled triangle, which is the first fundamental form.



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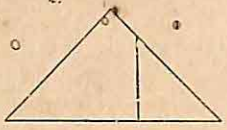

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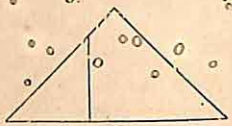

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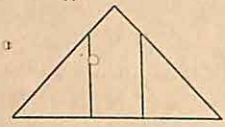

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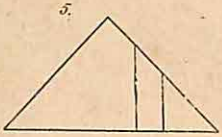

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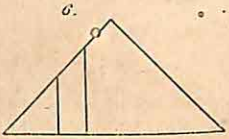

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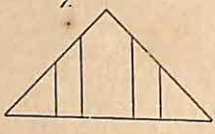

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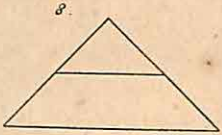

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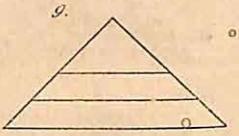

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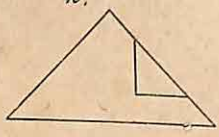

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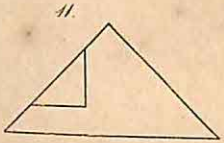

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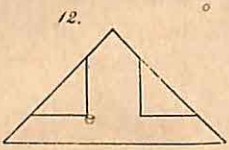

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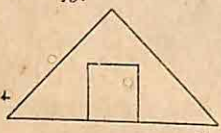

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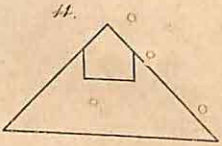

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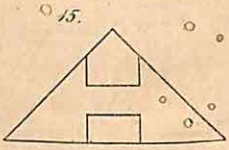

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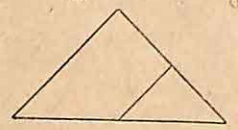

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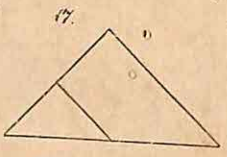

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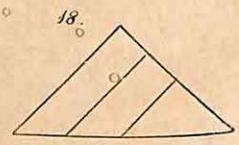


Plate XXXVI.

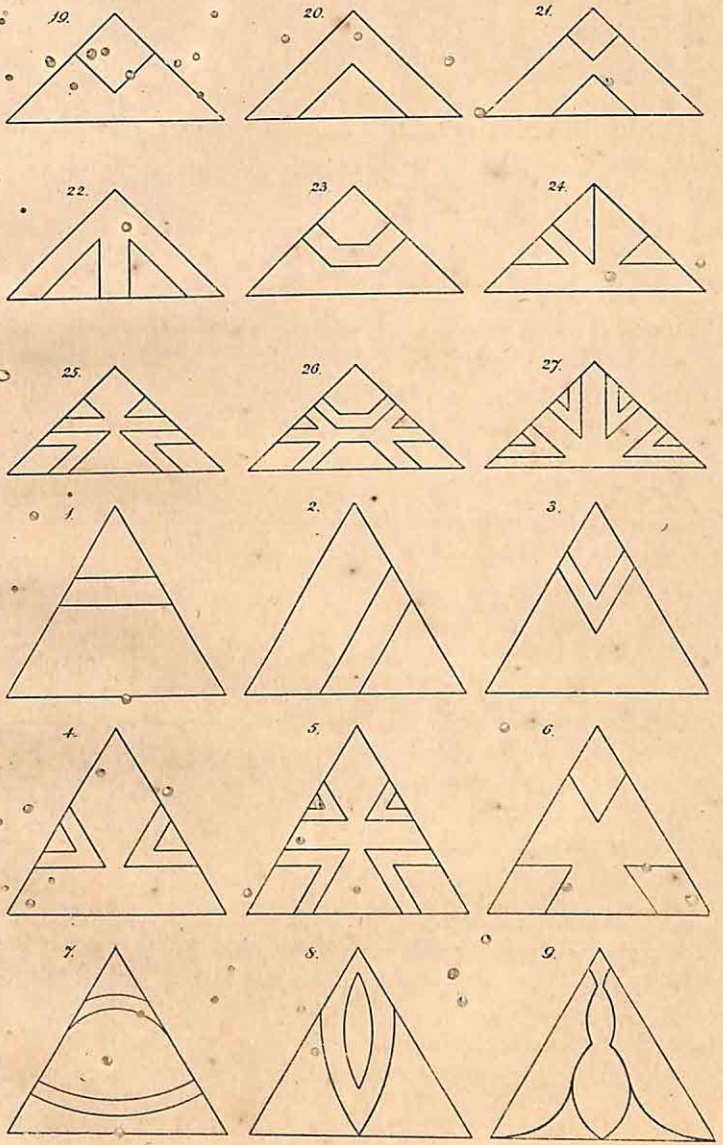


Plate XXXVII.

The square is folded thus:

1. Fold the square diagonally, and two right-angled triangles lying upon one another are produced.

2. Hold this double triangle by its base, fold the right acute angle on to the left acute angle, and a smaller right-angled triangle is produced; now it is fourfold.

3. Hold this triangle by its base and again fold the right acute angle on to the left. N.B.—This triangle has one side consisting of two edges, and the other of one. In folding the right acute angle on to the left, only one of these must be folded upwards and the other downwards; this is done in order to make all the triangles as nearly as possible equal in size.

Each child has now an eight-folded right-angled triangle, and this is the form which he is to cut according to certain rules.

The children should either make creases or mark with lead pencil on the triangle where they are to cut. The entirely open side of this triangle should always be held towards the left.

The simplest cut is along a line drawn from the apex to the centre of the base. When the children have drawn this line they should cut through it, the pieces obtained should be examined: the four small triangles and the one square thus produced should be arranged on the large square of paper, and when the arrangement is approved of by the teacher the pieces should be mounted. To help the children to mount their pieces accurately the large squares should have the diagonals and diameters marked.

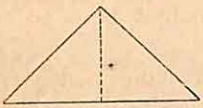
In the early lessons it would be well for the teacher to have a large pattern mounted which she could fix on to the blackboard for the children to see and imitate; it would be well also for the teacher to draw a triangle on the blackboard and show on it where she wants the children to mark theirs.

The two squares must be of different colours in order that the pattern may be clearly seen. The children cut first through perpendicular lines, then horizontal, then oblique, and finally curved ones, as will be shown in the patterns given.

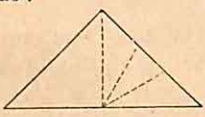
The second fundamental form, which is not given until the children are well acquainted with the first, consists of a six-folded equilateral triangle. It is obtained from the square in the following way :—

1. Fold the square diagonally and a right-angled triangle is produced.

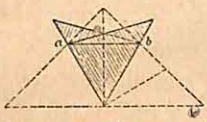
2. Hold this triangle by its base and fold the right acute angle on to the left; unfold this and there is the right-angled triangle with a perpendicular line from the apex to the base, thus :



The right angle that this line makes with the base is to be divided into three, thus :



When the angle is trisected, fold two-thirds over. It will then be found that the part of the triangle unfolded is two-thirds; this also must be folded over. The triangle now appears thus :



The projecting ends (from *a* to *b*) must be cut off, when it will be found that a six-folded equilateral triangle is produced. The entirely open side is the base.

The projecting ends that were cut off should be thrown away, as they are of no use.

Lines should now be made on this triangle to help the children in cutting. When cut, the pieces should be arranged and mounted as in the first fundamental form.

The patterns given for the teacher's use show many different cuts.

Paper-cutting is a very favourite occupation with children, and it is a very useful one, for by its means children learn form, colour, and arrangement of different forms, and accuracy, neatness, and cleanliness in mounting. It also teaches children how to handle sharp instruments (scissors), making them careful to hurt neither themselves nor their neighbours.

GIFT XIV.

Paper-plaiting, Weaving, or Braiding.—This occupation can be adapted to children of all ages, for simple plaiting can be done by children of three years, and, on the other hand, some of the more complicated patterns require all the patience and perseverance of children of thirteen and fourteen years.

The material consists of—

1. **The Braiding Sheet.**—This is a sheet of paper cut into slips, leaving, however, a margin all round to hold the slips together; this forms the foundation of the work.

2. **The Braiding Strip.**—This is a strip of paper, the same width as the slips of the braiding sheet and as long as its width.

3. **The Braiding Needle.**—This is a long thin strip of wood pointed at one end and having a slit at the other end for the purpose of holding the strip. Sometimes braiding needles are made of steel.

This occupation is a great favourite with all children, and is at the same time a very important one. The three elements—number, form, and colour—are constantly before the children. The necessary repetition makes it a great means of improving dull children; *e.g.*, in weaving a mat the children must repeat the same number so many times, thus: "two up, two down," until the mat is completed, that it is impossible for them not to become familiar with this number.

In every piece of braiding at least two different colours are combined, and thus, if the colours are judiciously selected, the children's taste for colour is cultivated.

Paper-plaiting gives occupation to both hands, for the left is also busy most of the time. It may be considered as an introduction to darning, weaving, straw-plaiting, etc. It is also a help to dictation, inasmuch as the teacher dictates the pattern, the children listen and do the work under the supervision of the teacher.

Besides all these advantages, the mats when finished can be made into useful little articles, such as pin trays, toilet tidies, needle books, blotting books, boxes, spill cases, etc. These the children are delighted to take home and give to their friends as presents of their own handiwork.

The mats for the youngest children should be large, of stiff paper and have wide slips; stiff brown paper is very good for a first mat.

The strips can be plaited with the fingers, as the little ones might find it difficult to thread the needle.

The simplest pattern is "one up, one down," and as this will have to be repeated so often, it would be as well, for a change, to let the children plait strips of different colours and of different widths, alternately broad and narrow strips.

In giving a lesson the teacher should be provided with a very large mat for herself, so that she can work with the children, and they can see what she is doing. The lesson should commence with a little conversation about the different materials and the use of each.

The teacher would then show the children how to thread their needles. When these are ready she should proceed with the braiding, thus: First under the margin, then under one strip or one up, and over the next, or one down; the children to say this after the teacher while they work, thus: "one up, one down," "one up, one down," etc.

When the strip is plaited through the braiding-sheet it must pass under the margin at the other end and be held very firmly while the needle is pulled out. This strip must be pushed up well to the top. The second line must begin in the opposite way—that is, the slip that was pressed down before must be raised now, thus: Thread needles, place them under the margin, one down, one up, one down, one up, etc.—that is to say, if the first strip is one up, one down, etc., the second strip will be one down, one up, etc.

Without this combination there would be no braid work, only loose strips. The third line will be the same as the first, the fourth like the second.

A good exercise in counting is to let the children count the little squares the strips make, also they might count the number of lines they have plaited in the mat.

The following are a few of the rules for braiding, and from these many others may be easily invented. They may be classified in three groups. Group 1, Simple Patterns; 2, Combinations; 3, Derivations.

Group 1, Simple Patterns.—The simplest rule or pattern (1) has already been given, viz., one up, one down, with its opposite one down, one up.

Pattern

(2) 2 up, 2 down, with its opposite 2 down, 2 up, etc.

(3) 2 „ 1 „ „ „ 2 „ 1 „

(4) 3 „ 3 „ „ „ 3 „ 3 „

(5) 3 „ 1 „ „ „ 3 „ 1 „

(6) 3 „ 2 „ „ „ 3 „ 2 „

(7) 4 „ 4 „ „ „ 4 „ 4 „

(8) 4 „ 1 „ „ „ 4 „ 1 „

(9) 4 „ 2 „ „ „ 4 „ 2 „

(10) 4 „ 3 „ „ „ 4 „ 3 „

(11) 5 „ 5 „ „ „ 5 „ 5 „

(12) 5 „ 1 „ „ „ 5 „ 1 „

(13) 5 „ 2 „ „ „ 5 „ 2 „

(14) 5 „ 3 „ „ „ 5 „ 3 „

(15) 5 „ 4 „ „ „ 5 „ 4 „

Group 2, Combinations.—By combining two or more of the preceding patterns numerous other patterns are produced; *e.g.*—

Patterns.

1 and 2 combined = 1 up, 1 down, 2 up, 2 down, etc.

1 „ 4 „ = 1 „ 1 „ 3 „ 3 „ „

1 „ 5 „ = 1 „ 1 „ 3 „ 1 „ „

1 „ 6 „ = 1 „ 1 „ 3 „ 2 „ „

Group 3, Derivations.—The patterns contained in this group are derived from the preceding two, but they commence irregularly. The "steps" or "staircase" patterns belong to this group; these are obtained by moving the pattern on each line one degree either to right or left; *e.g.*, the pattern two up, two down, would appear thus:

1st line—2 up, 2 down, 2 up, 2 down, etc.

2nd line—1 down, 2 up, 2 down, 2 up, 2 down, etc.

3rd line—2 down, 2 up, 2 down, 2 up, 2 down, etc.

4th line—1 up, 2 down, 2 up, 2 down, 2 up, etc.

5th line—the same as the first, "2 up, 2 down," etc.

Patterns having a centre design should be commenced at the centre, working alternately above and below the middle strip. This ensures the design being in the middle of the braiding-sheet.

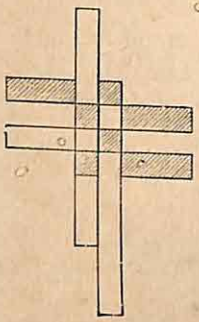
When the braidwork is completed it is easily converted into pretty and useful articles, such as mats, toilet tidies, baskets, pin trays, boxes, spill cases, etc.

The strips plaited in the braiding-sheet must be pushed close together, and when the sheet is quite full the ends must be cut even with the edge of the braiding-sheet; these ends must then be fastened to the margin. If a sheet of white paper be put at the back of the sheet and the edges bound with coloured paper, or notched out, a very pretty mat will be made.

To make a basket, two pieces of braidwork are required. The ends must be fastened as in making a mat, then one piece of paper is placed between the two mats.

When this is partially dry the edges must be bent up and the corners firmly creased to make the edges stand up all round.

A handle should be made and fastened to the basket. Paper-fasteners will be found very useful for this purpose. The basket may be greatly improved by trimming with very narrow ribbon bows.



The making of bookmarks—This is a branch of paper-plaiting, but it is braiding without the braiding-sheet. It is called free-braiding. The material consists of long and short strips of paper of the same width.

Two long strips of paper are to be doubled in halves; these to be held in the left hand, with one open end and one

closed end at the top, and one end about an inch higher than the other.

The short coloured strips (about four inches long) are also to be doubled in halves, one to be held in the right hand and placed round the first long strip and inside the second. The long strips then to be turned round so that the coloured horizontal strip is pointing to the right. Another strip to be held horizontally and placed round the first long strip and inside the second. Other strips to be placed until the long strips are full. The ends should then be cut to equal lengths and notched.

GIFT XV.

Slats for Interlacing.—These slats, or laths as they are sometimes called, are about ten inches long, three-eighths of an inch wide, and one-sixteenth of an inch thick. They are made of birch or other tough wood. Many geometrical figures can easily be made by using a few of these laths.

This and the two following gifts belong to the group of edges, though really they form, as it were, the transition from the plane of the tablet to the edge of the staff. They differ, however, from both, for whereas the forms produced by the former, viz., tablets and staffs, were only laid on the table, the forms made with these can be raised from the table. The child first receives one slat, and on examining it he perceives that it is long, thin, narrow, oblong, and flexible; that it is made of wood, and has two long flat sides, two narrow sides, or edges as he will call them, and two ends. The child must now learn to point quickly and accurately to its different parts, its upper and lower sides, its top and bottom ends, its right and left edges, and its centre. He should also name any objects similar to the slat; *e.g.*, flat rulers, frames of slates, planks of wood, laths used in building,

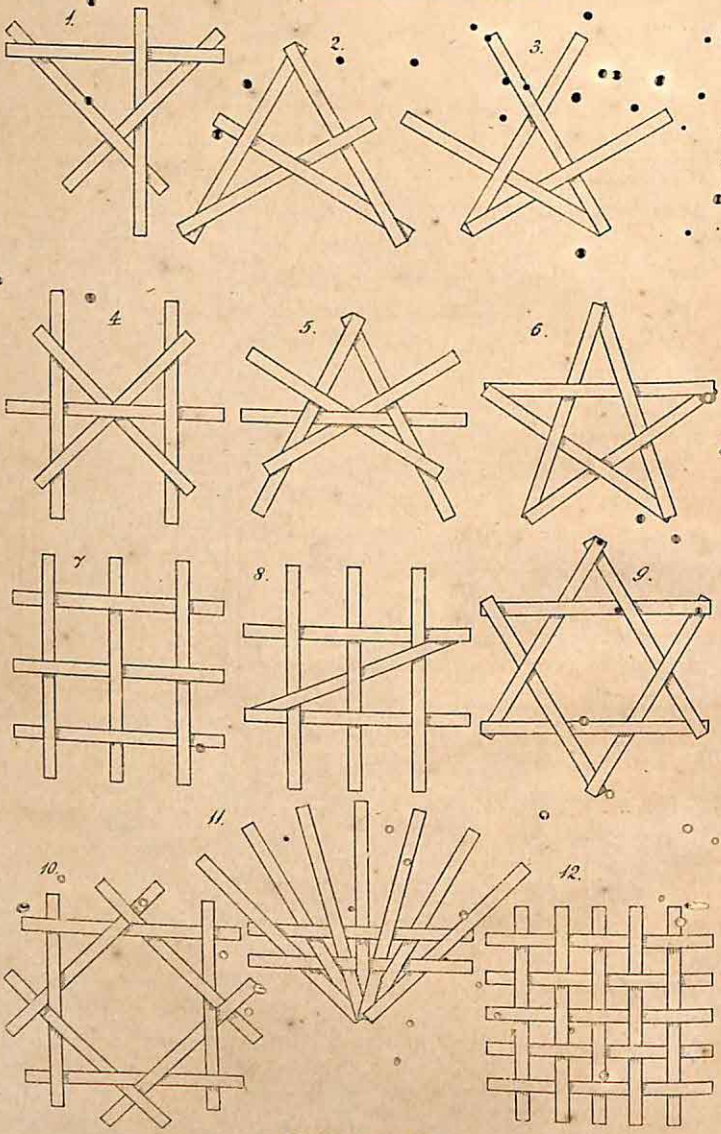
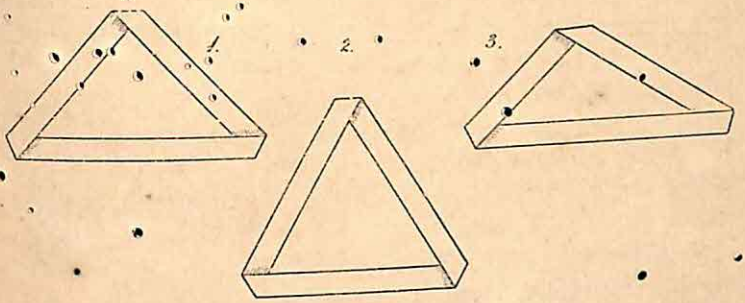
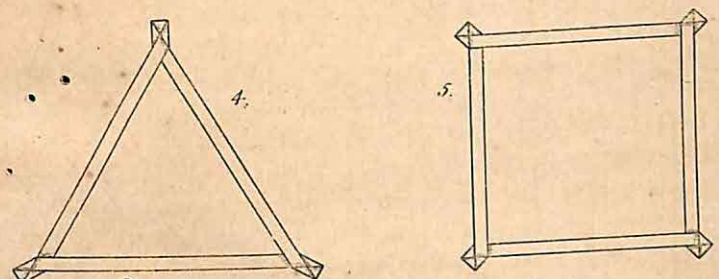


Plate XXXVIII.





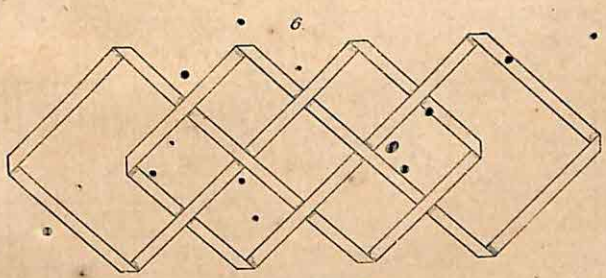


Plate XXXIX.

etc. He should now be required to place the slat in all the different positions he can, thus: vertical, horizontal, and oblique, from left to right and from right to left.

A second slat is then given; it is compared with the first, and is found to correspond exactly with it. The two are then placed in different positions. Parallels and all the different angles can now be formed.

A third slat is then given, and the same exercises are continued, the triangle being produced.

So far, this occupation is similar to that of stick-laying, the work being to examine, describe, compare, and lay in different positions.

It is not until the fourth slat is given that the children are able to make anything that will hold together—that can be raised from the table. In order to do this, each slat must come in contact with at least three others.

Several forms can be plaited with four laths; when made, each form must be talked about. The different kinds of lines, angles, and figures must be named and described. Additional slats to be given at the discretion of the teacher. In every case the form is to be fully described. For example, the first form has eight right angles, eight acute, and eight obtuse angles, two triangles, and one trapezium. (Plate XXXVIII., No. 1.) It will be seen from this that *form* is the principal element introduced into this occupation.

The laths need very careful handling, for if one slips out of its place the whole work falls to pieces.

The laths should be plaited on the table, the left hand being spread out to cover, as far as possible, the whole of the form, thus holding the slats in their places, while the right hand is employed putting the slats together.

GIFT XVI.

The Slat with many Links, or the Jointed Lath.—These slats are about the same width and thickness as those of Gift XV., and are made in lengths of four inches. These lengths are joined together, and can be either opened or closed. The jointed lath varies as to the number of its links or joints, consisting of four, six, eight, twelve, and sixteen. The simple ones are first used, the others gradually following. They are used to represent various lines, angles, figures, and letters.

When the smallest jointed lath is given to the children, they should be shown how to open it so as to form a straight line, and place it vertically, horizontally, and obliquely. The various angles should be represented, named, and described. After these should follow triangles, squares, oblongs, pentagons, etc. Teachers will notice that the jointed lath is simpler than Gift XV., as there is no plaiting to do, and for this reason it might be introduced much sooner.

It will be seen that geometrical exercises are specially provided for, and that this gift would give useful occupation to the children in the senior departments, especially if the geometrical forms were afterwards drawn on slate or paper.

GIFT XVII.

Material for Intertwining. (Plate XXXIX.)—This gift is similar to that of interlacing, but here permanent results are produced. The material consists of slips of white or coloured paper, eight or ten inches long, and three-quarters of an inch wide. These strips are folded into three, thus making them a quarter of an inch wide and threefold. Each

child has at first one of these strips, and when he has folded it he places it in different positions, viz., vertical, horizontal, and oblique; after this he twists the strip into various forms.

The different kinds of angles should be made first, then triangles, squares, oblongs, etc. Where the paper is folded it must be well pressed down, and the ends of the paper pasted together.

Any very neat work should be mounted on cardboard.

By means of this occupation the children acquire great deftness and neatness of hand.

In making the various forms accurately their eyes become accustomed to measuring distances.

It will be noticed that, like the preceding gifts, this one still further impresses on the child the different geometrical terms. The child, by thus constantly making these forms, readily learns to distinguish them from each other, and if the conversations between him and the teacher have been properly conducted he will be able to describe the various forms correctly.

GIFT XVIII.

Material for Paper-folding.—This is one of the most important gifts, for by its means the children learn form and colour, and gain very much general knowledge. Besides this, it gives them great manual dexterity, and thus prepares the way for various occupations in after life.

The children, after a few exercises in folding the sheet of paper, will produce a great variety of instructive and interesting forms.

But the teacher must be careful to introduce the forms gradually, and to accompany the work with pleasant, interesting, and instructive conversation. While the children are

thus learning to fold, they are being taught to speak well and accurately, and are also gaining much useful information. The teacher must bear in mind that care and cleanliness form an essential part of this occupation.

Oblong strips of paper should first be used for folding, and afterwards square pieces.

The oblongs should be two and a half inches wide and seven inches long. A half-sheet of letter paper will cut into four oblongs.

An oblong should be passed to each child. The children should then be required to say all they can about it. It is paper, white, thin, smooth; it can be folded, and it can be easily torn.

The teacher might here introduce a short simple lesson on paper, of what it is made, and some of its uses, etc.

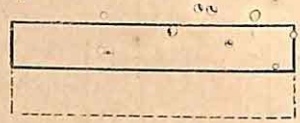
They will also learn that it has four corners and four edges; that two of the edges are long and equal, and two are short and equal; that it has four right angles; therefore it is an oblong.

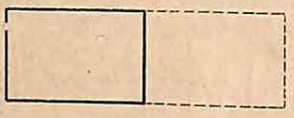
They must then be exercised in pointing quickly and accurately to the lines and corners, thus: the top right corner, the bottom left corner, the top left corner, and the bottom right corner.

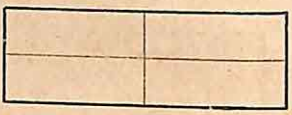
The top and bottom horizontal lines and the right and left perpendicular lines. (Plate XL., oblongs.)

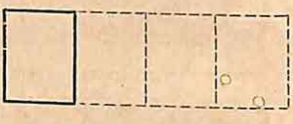
They must now begin to fold, thus: Take the bottom horizontal edge (long lines to be horizontal) in your two hands and fold it over to the top horizontal edge; when the edges are exactly level, press the paper down very firmly; the children will see that they have another oblong half the size of the first. The paper should then be opened or unfolded to show that it is divided by a horizontal line into two oblongs. There are now three horizontal and two perpendicular lines.

1. Oblongs.

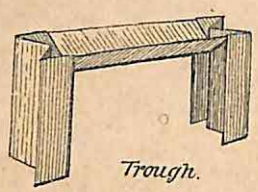




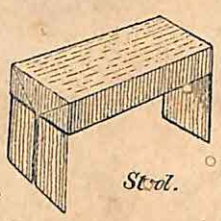




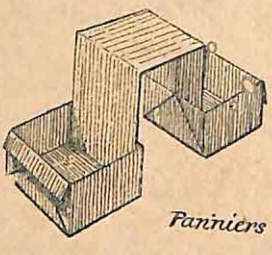
2. Objects.



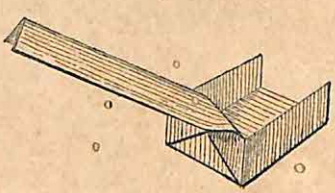
Trough.



Stool.



Panniers



Shovel.

Plate XL.

II. Squares Geometrical forms.

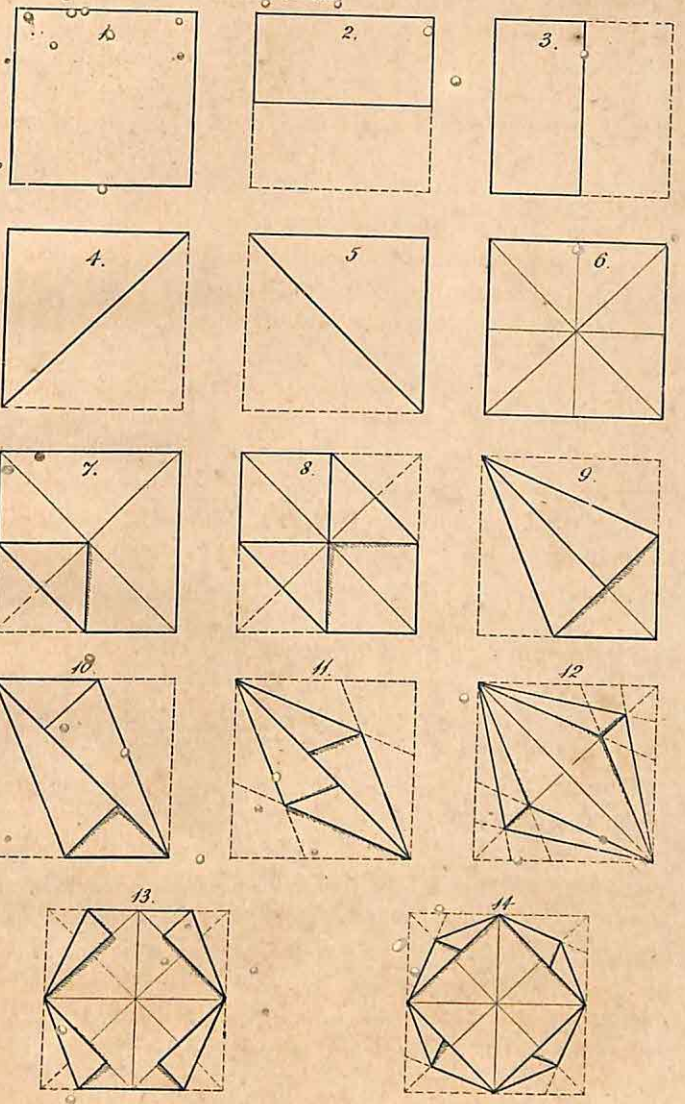


Plate XLI.

They should now fold the right perpendicular line to the left, taking care that the right edge is exactly on top of the left before the paper is pressed down in the middle. The children now have another oblong, but this time it is a short one. On the paper being opened they will see a new perpendicular line crossing the central horizontal one: these two lines divide the paper into four oblongs. All these particulars the children must learn before beginning to fold the objects.

The simplest object and therefore the first to be folded is the spill, then follow the shovel, form or bench, table, reading desk, hatchet, trough, bath, panniers, etc. (Plate XL., objects.)

When each object is folded, the teacher and children must have some conversation about it; indeed, a short object lesson could with advantage easily be given on each of the folded forms.

After a while the children may have square pieces of paper to fold. These should be about four inches square. They should be folded into—1, Geometrical Forms; 2, Objects; 3, Star Forms.

Geometrical Forms (Plate XLI.).—Squares of either white or coloured paper should be given to the children. (It is economical to use white at first, giving the coloured ones afterwards as a reward.)

The children describe the paper and compare it with the oblong. This new paper is a square. "What have they seen square before?" "What is a square?" etc. If they fold the bottom horizontal edge to the top they have an oblong. On opening the paper, they will see a middle horizontal line dividing the square into two oblongs. If they fold the right perpendicular edge to the left, they will produce another oblong the same size as the last, but perpendicular instead of horizontal. On opening this paper now, they will see a

perpendicular and horizontal line crossing each other in the centre of the square and dividing the square into four small squares. They should now take the right top corner and fold it to the bottom left corner; they thus making a triangle. This should be examined; it has one right angle and two acute angles; therefore it is a right-angled triangle. On opening the paper they will see a slanting line going from corner to corner across the square. This line divides the square into two right-angled triangles. If they now make the other diagonal of the square, by folding the left top corner to the bottom right corner, they will find that they have another triangle similar to the other.

When the paper is opened they see four lines crossing each other in the centre; these are the two diagonals and the two diameters. The children should now count and describe the different lines, angles, and figures that they see on their paper.

If children are sufficiently advanced, other geometrical forms may be made; *e.g.*, pentagon, hexagon, trapezium, rhomboid, rhombus, and octagon. Children taught in this way will readily distinguish and understand these geometrical figures.

Simple Objects.—The children should be provided with squares of paper, which should be folded in order to mark the diameters and diagonals. The children should point to the centre of the square and then fold the right top corner exactly to that spot. If this is turned with the folded edge to the bottom the children will see that they have made something resembling a ship in full sail. Now fold the left top corner to the centre. These two corners folded over form a triangle, and the whole looks like a house, the triangle forming the roof.

The three corners folded to the centre gives the form of an open envelope, and the fourth one folded that of a closed

envelope, a pocket handkerchief case, or a scent packet. On one side of this form the children see four triangles folded over, with the apexes all touching in the centre; on the other side is a square divided by diagonals and diameters into eight triangles.

The children turn the squares upwards and fold all the corners over to the centre. When this is done, they will see four little triangles, and if they turn their form on to the other side they will see four little squares. From this form several objects may be folded; *e.g.*, cruet, vegetable dish, work basket, etc.

The children should learn how to fold a windmill. The following directions will be necessary :—

The diameters and diagonals to be found, the bottom and top horizontal edges folded to the middle horizontal line, and the right and left perpendicular edges folded to the middle perpendicular line. When the paper is opened the children will see sixteen small squares. Each of the corner squares has the diagonal through it.

The perpendicular and horizontal lines to be again folded to the middle, each corner square is then to be folded in, its diagonal being drawn out and placed outside, thus making a right-angled triangle at each corner of the square, forming the sails of the windmill. From the windmill very many objects may be made; *e.g.*, vase, boat with sail, double boat, purse, box, picture frame, etc.

It is almost impossible to describe briefly in words or by illustrations the way in which these objects are made. Teachers must see them made in order to learn how to do them.

3. **Star Forms.** (Plates XLII. and XLIII.) There are five ground forms on which the star forms are made; they are—

(A) The four corners of the square are folded to the centre, and the triangles thus formed are used for making star forms.

(B) Ground form (A) is turned over, and the four corners of the square are folded to the centre. On turning the paper over, again four little squares are seen, and these are used for the second ground form.

(C) If ground form (B) is turned over, the children will see four divided triangles; these are used for the third ground form.

(D) The fourth ground form is produced by taking ground form (A) and folding the corners of the square to the centre over the triangles. Four triangles are again produced, and if these are raised four little squares will be seen underneath.

(E) The fifth or windmill ground form is produced from the windmill by opening the sails and folding them so that the outer points of the sails touch the centre of the square. then there are four little squares on the large square.

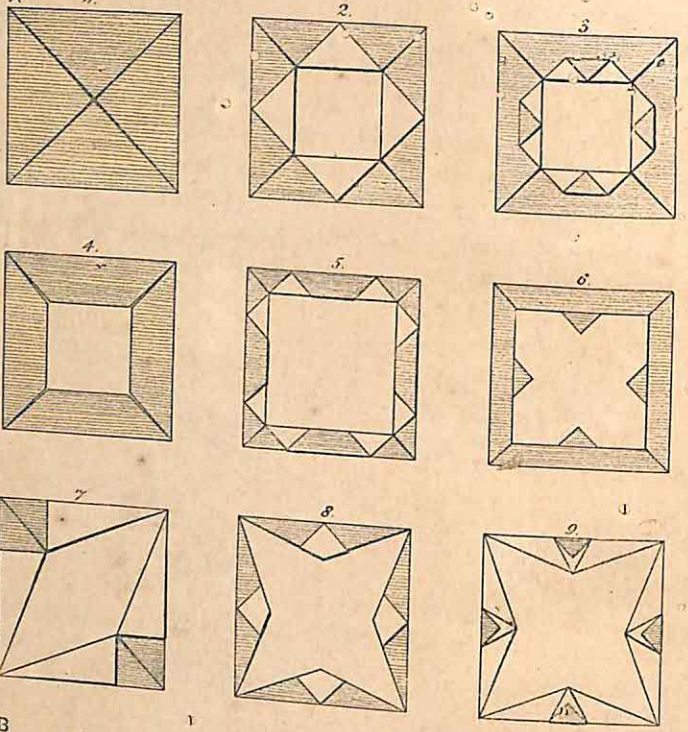
Star forms, *i.e.*, pretty and regular forms are made on these ground forms by folding the corners certain distances, either backwards or forwards. The forms produced are innumerable, and are calculated to cultivate the children's love of the beautiful, and to give them a taste for regular and symmetrical forms. Paper-folding also makes them clean, neat, and accurate in their work, gives them dexterity of hand, develops a love of order and arrangement, and at the same time offers a wide field for the display of their inventive powers.

GIFT XIX.

Peawork.—The materials for this occupation consist of round thin sticks about ten or twelve inches long, and peas previously soaked in cold water for about twelve hours. The sticks have to be cut the required lengths and sharpened at both ends. This should be done by the children, who will therefore require pocket-knives. Edges are again represented by the sticks, and corners by the peas.

II. Squares. Star forms.

A



B

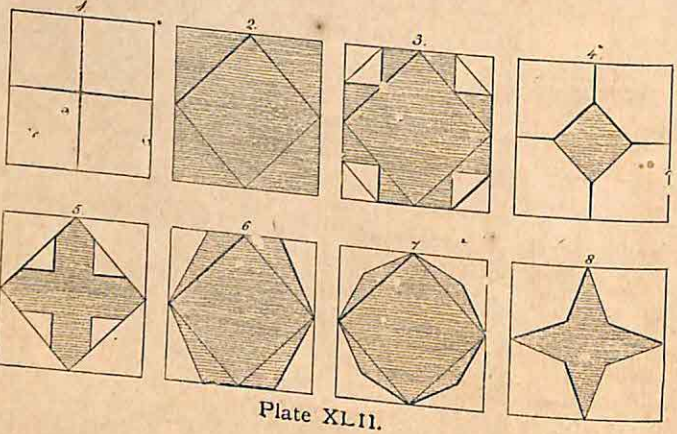


Plate XLII.

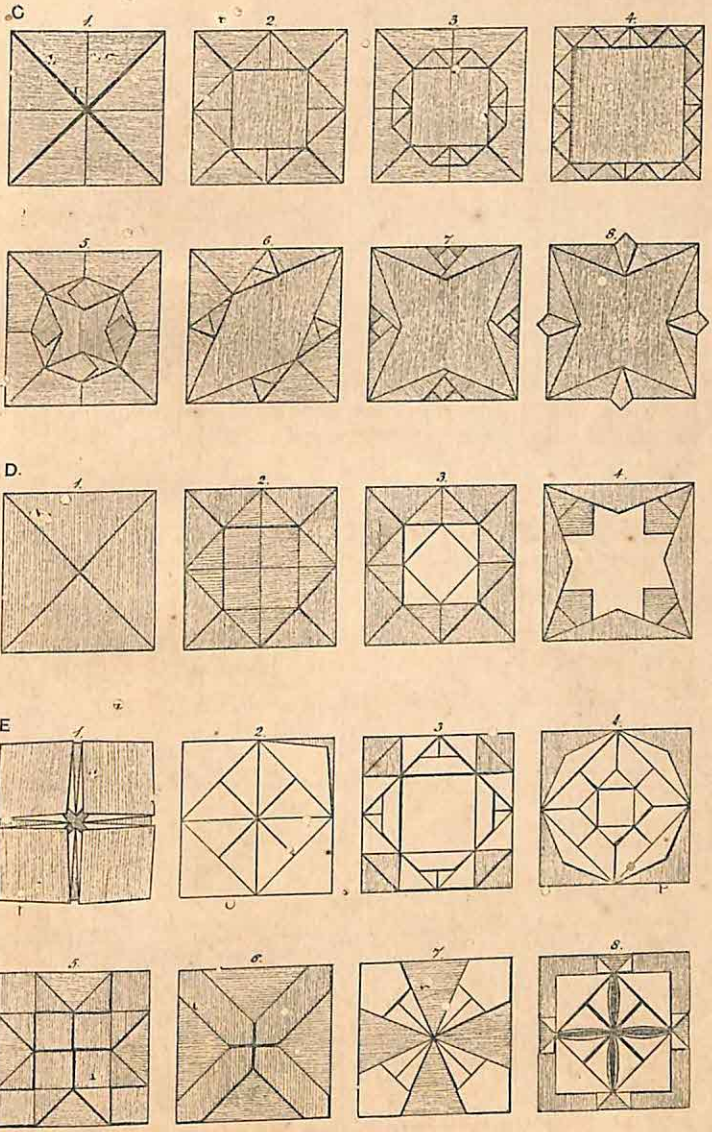


Plate XLIII.

In stick-laying only the outlines of objects were produced; but in this occupation, owing to the peas which are used as a means of combination, skeletons of objects are produced; these are more instructive than the mere outlines, and their durability renders them more gratifying to the children.

Peawork is adapted to the more advanced pupils, as great care is needed in the use of the pocket-knife in sharpening the sticks and in cutting them the required length, and because it is not very easy to put the sticks exactly in the centre of the pea.

As with the previous occupations, when this is first introduced the teacher and children talk about the material to be used. The teacher then shows the children the length they are to cut their sticks. It is a very good plan to give one of the required length to each child. The teacher then sharpens a stick to show them that the point should be like that of a nicely-sharpened pencil, going off gradually to a point.

One stick is held up and a pea put on one end, then another stick is joined to it to make a straight line, then acute, obtuse, and right angles should be made by combining two sticks with one pea.

Next three sticks are joined by means of two peas into a longer line, and into angles with one long and one short side. The children then proceed to make triangles, squares, oblongs, etc.

Many letters and numerals may be made with peas and sticks.

From the square a cube can easily be made, and from this may be produced many forms; for example, a chair, birdcage, etc.

With the peas and sticks the children can make many pretty objects, which they can take home and give as presents to their friends. Tables, sideboards, baskets, wheelbarrows, etc., may all be made; indeed, almost any object may be

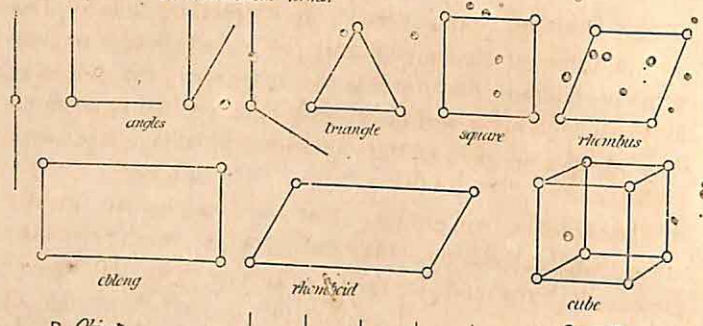
constructed with this material. It would be well for the teacher to work with the children; she should have a pattern in peawork for them to copy, especially when the object is rather difficult. The objects made by the children again form subjects for instructive conversations between the teacher and children, hence this gift materially helps the children to acquire much useful information.

GIFT XX.

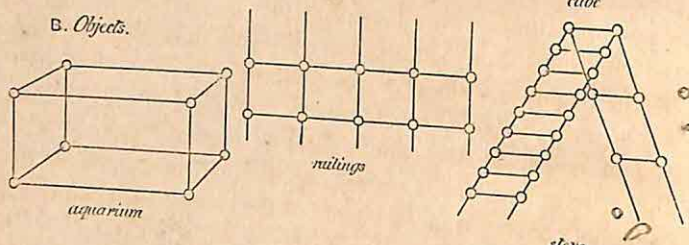
Modelling.—The material for this occupation is a plastic substance, such as clay, wax, guttapercha, or even putty. Wooden knives are sometimes used; these are of various shapes.

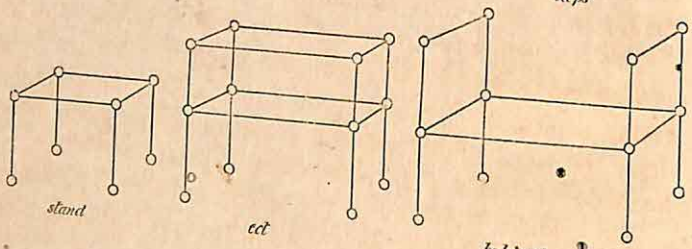
As the clay soon becomes dry and then loses its plastic character, it will be necessary to keep it in a cool place and cover it with a wet cloth. A closely-fitting tin or zinc-lined box is admirably suited for the purpose of keeping the clay moist. Work not finished in one lesson and required for further use can be preserved by covering it with a wet cloth. Each child should be provided with a small board and a piece of oiled paper on which to do his work, or covers made of oiled baize should be put over the desks. These can be easily removed and cleaned at the end of the lesson and are then ready for use again. If this be done by some of the children a useful lesson is given to them and a good habit inculcated. It would be advantageous for the children to wear pinafores or blouses with long sleeves, as this would prevent their clothes from being soiled with the clay. As the pupils advance in the work, or if older children are being taught, it would be well to use boards with cross lines on them and for each child to have a ruler divided into inches and even half-inches. This would enable the teacher to have the various geometrical figures made to scale, and would be a great incentive

A. *Geometrical forms.*



B. *Objects.*





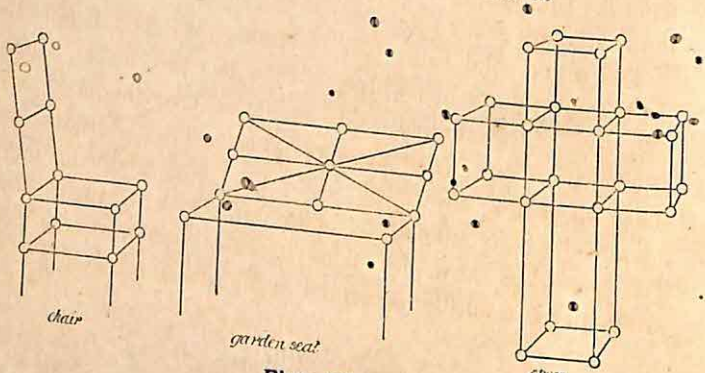


Plate XLIV.

to the child in more advanced work, teaching him to place greater value on accuracy of work. This gift is very popular with the children; they are able to see the results of their work in, to them, a more real form; they have greater freedom as they advance in skill, and are able to make things that strike their fancy.

The teacher will notice that this occupatian greatly strengthens and develops the muscles of the hand, producing greater dexterity and flexibility. It also gives the teacher many opportunities for increasing the general knowledge of the children. For instance, the substance used (clay) should be thoroughly described to the children; the word "plastic" would introduce other substances to the notice of the children, and of course lessons would follow. Again, "baked" clay and articles thus made should at least be mentioned in the course of conversation, and some of the things, such as bricks, drain-pipes, plates, cups, etc., might be made in clay.

This occupation is carried out by each child having a piece of clay and at first working with the teacher. The teacher, taking a piece of clay, should roll it into a ball, the children doing the same. From this ball or sphere many objects may be made—an apple, pear, plum, cherries, potato, etc.

The cylinder should follow the sphere and should be made from it. Simple objects, such as a roller, cigar, bottle, sack of flour, etc., are easily produced.

The other solid from Gift II. (the cube) should now be made, and from it many objects, such as a box, house, coffee-mill, etc. Other simple solids should next be modelled, and afterwards a number of common objects, the children sometimes suggesting the object to be modelled, while the more advanced pupils should be allowed to work by themselves. To encourage the children to execute good work the best productions should be preserved in the school museum.